

AMERICAN AGRICULTURIST.



Agriculture is the most healthful, the most useful, and the most noble employment of man.—WASHINGTON.

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NO. V.

A. B. ALLEN, Editor.

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TO CORRESPONDENTS.

THE edition of our paper is so large now, that we are obliged to close our columns early in the preceding month, in order to get it printed and sent off promptly at the time of its date. We wish our correspondents hereafter to bear this particularly in mind; and if their favors do not reach us at least three weeks in advance of the first of the month, there is no certainty that they can be inserted in that number of the paper, but may lie over till the succeeding month. Those unaccustomed to edit a periodical of this kind, cannot estimate the importance of an editor's having his matter in hand, and all prepared, at least one month in advance of publication. In consequence of not getting articles in season, we are frequently obliged to let them lie over nearly a year, much to our own regret and that of correspondents. Advertisements must be sent in as early as the 15th of the month in advance.

JERUSALEM ARTICHOKE.

THIS root is cultivated precisely like the potato, in hills or drills. At the South and West it is fed off by turning swine on to the fields, who root them up and consume them at pleasure. A winter's supply of food is thus easily provided for their hogs, and the crop fed off the land greatly enriches it. The artichoke is considered one of the best of fertilizers, as it derives a large amount of its carbon and nitrogen from the atmosphere. They should be cultivated extensively in well grown orchards, as they do well in the shade, pulverize the soil without exhausting it, and leave it in a good condition for growing trees. After the fruit is gathered turn the swine on to feed them off. Rooting them up is nearly as beneficial as plowing; at the same time the swine destroy nearly all the insects harboring round the trees, and the manure they leave is equi-

valent to a good top-dressing. The artichoke is a delicious table vegetable, pared and cut up raw in thin slices with vinegar added to it. Many are also fond of it boiled and mashed like turnips. Frost does not injure the roots, and after the first planting they will propagate themselves. The roots of the Jerusalem are ill-shaped, rather large, and of a pure white color. The kind of artichoke bearing a root with pink streaks or spots on the flesh part, is not as good as the Jerusalem. They grow well in the poorest land.

CULTURE OF CABBAGE

THE cabbage crop is a very important one in the vicinity of cities, and immense quantities are raised there; but we doubt whether as much attention is paid to the culture of this vegetable on the farm as there should be, considering its importance as food for both man and beast. It is true that in consequence of the severity of the weather of the Northern States (cabbage being a very watery vegetable), it is not as profitable to feed to stock as in the milder winter climate of Great Britain; and, in addition to this, it is more difficult to keep with us, and more difficult to store. Nevertheless, for food for cattle, as the frost cuts off the grass in the autumn, and before the severity of the winter sets in, few vegetables excel it. Then, such an immense quantity can be raised per acre where the ground is favorable for the crop, and it is so easily cultivated, it is quite an inducement for those who have but a small quantity of land to devote a few acres to it.

There are various methods of cultivating the cabbage; for the field, with the larger variety, however, we prefer planting them in hills two and a half to three feet apart each way, it is so much easier using the cultivator among the plants, and thus saves the tedious process of hand hoeing. It

is a general rule to sow the seed in beds and then transplant. A recent and much superior practice is, to sow from three to five seeds in the places where you wish one plant to grow. In this case the largest and most thrifty plant only is left standing. After it gets three to four weeks old, the other plants are pinched off or broken down. Grown in this way the heads are said to be much larger and finer than when the young cabbages are transplanted, as it is contended that however carefully the process may be performed, the plant receives a check in its incipient state which it never entirely recovers. There is reason and philosophy in this, and we should be glad if those engaged in the culture of cabbages would make experiments the present season between different rows, side by side, sowing the seed as above, and in the usual method, and then transplant.

DEAD ANIMALS.

At all seasons of the year dead animals are to be seen hung up on fences and on trees; and especially is this the case in spring. On every farm where sheep are kept, dead lambs are suspended in the beautiful, blooming, and fruit-bearing orchards—how shocking!—to annoy the sight and smell, and waste the farmer's means. Dogs and cats too are frequently hoisted into view in the same annoying and disgusting manner. If horses, cattle, sheep, or hogs die, they are drawn out of sight, but not out of smell, and are still sources of disgust. Why is all this? If the farmer be so unfortunate or so negligent as to lose an animal, should he be so wasteful as to permit the carcass to decay uselessly in the open air, to the great annoyance of his family and every passer by? Does he not know that animal matter is the best and richest of manure? Animal matter contains every element that is necessary to grow every plant known. In it are phosphate and carbonate of lime, ammonia, carbon, in short, in the best form, all the essentials of vegetable growth. Its putrid power is great, and if added to the compost heap hastens fermentation, and adds greatly to its richness. Whenever a fowl, cat, dog, sheep, pig, horse, or cow dies, let the carcass be cut up, and the bones broken, and the whole added to the manure heap. The carcass of a single horse will turn loads of useless muck or peat into manure, richer than any ordinary barn-yard dung. Why then suffer it to decay uselessly and annoyingly? It is true it is not lost, for the gases that taint the air are appropriated by plants; but the farmer who owned the animal gets but a small portion of what should be all his own. Why, then, will he waste the *dead energies* of the horse, when he has lost the *living* ones? If our readers will heed what we say, they will not suffer dead animals to annoy the eye and disgust the nose hereafter. Bury them in the manure heap; add some lime to quicken decay, and charcoal dust or plaster to absorb the gases, and much will be gained to the good appearance of the farm, the quality of the manure, and the quantity of the crops grown; and much to the purse of the farmer. If your neighbor be so improvident as to waste a dead animal, beg it of him, that it may not be detrimental to health and useless to vegetation. Laws should be passed to compel the saving

and use of this most powerful of fertilizers, when common sense and decency fail to do it.

Whenever it is desirable to hasten decay, and rapidly turn animal matter into manure, sulphuric acid may be used. This would be too expensive (although the acid is cheap) for farm purposes, but may be employed for the garden, where expense is not so important. It is frequently desirable to have a rich manure in the garden, and it is not at hand. Animal matter put into sulphuric acid will in a few hours furnish it. Every house will supply much refuse animal matter. To this rats, mice, moles, feathers, hair, bones, horns, &c., may be added. If the garbage of a slaughter-house can be got, it should be. All these will soon be reduced to an available state, be inoffensive, and will add great fertility to the soil where used. The requisite quantity of acid may be ascertained by experiment—about 10 or 15 lbs. is usually allowed for 100 lbs. of animal matter.

A LESSON ON PLOWING.

VISITING the farm of Edward J. Woolsey, Esq., at Hellegat Neck, one day the past month, we were conducted over it by his manager, Mr. Samuel Pate. He has just begun his operations there, and will one of these days make it one of the most productive places that adorn this neighborhood. He showed us a field of about twelve acres, the most thoroughly sub-drained of anything we have yet seen in the United States. It was originally a deep morass; now it is a firm, dry, meadow. But as we hope to be favored with an account of the operation from Mr. Woolsey himself one of these days, we forbear further observation upon it.

Mr. Pate is a Scotchman, and having several Scotch plowmen, with Scotch plows at work, to gratify our curiosity he invited us to see them operate. The work was not done for show, but was such as characterizes the every day operations of good plowmen in Scotland; and if all were not as well done at home, they would be dismissed by their employer for awkward workmanship. The field in which we found the men at work was about 40 rods long, of a rich loamy soil, and coated with a tough old sward. Here the men set in and run their furrows from end to end, as straight as one could draw a line, turning them 6 inches deep, and 11 inches wide, slightly lapped, and packing them up one after the other all day long, with a single pair of horses, each plowman driving his own team, and not varying throughout their work, as we could discover, a single inch in the thickness or width of their furrow slices. We have seen as good plowing in Great Britain, but never anything like it before, as a whole, in the United States, though we have often been present at the most celebrated plowing matches. There were no snake trails, or ram's horns here, or half-turned sods, or untouched ground, or skipped places; but the whole was as thoroughly and evenly done as it would be possible to accomplish with the most careful spading, and when harrowed with the fine double harrow, the surface of the field had the appearance of a *well-dug* and *fine-raked* garden.

People may say what they please, yet we contend that good plowing is not only the first, but the most important part of the operations on the

farm, and without it nothing else can be thoroughly well done for the crop. It would be well for our farmers if they would take lessons on plowing, at least so far as to enable them to draw straight lines (for these are rarely seen in the United States), and stir and pulverize the ground well. We should be glad to get hold of the plow handles ourselves under Mr. Pate's instruction, and only regret that our numerous avocations elsewhere prevent our doing so; but as it was, we did absolutely stay long enough to turn a short furrow; yet, in comparison of those of the canny Scotchmen, we will candidly acknowledge it did not do us much credit. Our readers, however, will please bear in mind that we are now somewhat out of practice, and that we are unluckily more at home with the pen just at this moment than with the plow handles. We trust this will not always be the case.

One of the men whom we saw at work there is desirous of obtaining a permanent situation as a farmer. We were witnesses of his plowing, and can recommend that, and as for the rest we will refer to Mr. P. Any one employing him might be sure of one thing on his farm, and that is—*straight furrows*.

BUSH PULLER.

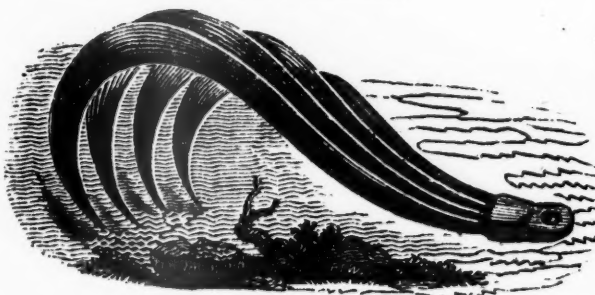


FIG. 40.

This is a very useful implement to attach to bushes, clumps of roots, and bogs, for the purpose of pulling them out of the ground. It is made with two, three, or four claws. These are hooked to the bush close to the ground, an ox-chain is then hooked into a hole at the other end of the puller, the cattle attached, when the bush and roots are easily hauled out. It also answers very well pulling out small stumps. It will do the work of half a dozen men in clearing and grubbing. Price \$3 to \$4.

DUTTON CORN.—Mr. Frederick Plumb, of Salisbury, Conn., says that he received an ear of corn from a friend, who said it was from the Rocky Mountains. The grains of this ear were covered with a husk. He has improved it by cultivation, and thinks it will soon be entirely free from husk, and will be in perfect resemblance of the Dutton corn, which Mr. Plumb esteems as the best kind for the Northern and Eastern States. He planted, a few years since, ten acres of Dutton corn, ten acres of the yellow eight-rowed, ten acres of the twelve and fourteen-rowed white, and ten acres of eight-rowed white. The Dutton proved a much better crop than either of the other varieties. Next to the Dutton, Mr. P. prefers the eight-rowed yellow.

We are in want of a first quality of Dutton Corn for seed. Who has it for sale?

NURSERIES OF MESSRS. HOVEY & CO.

We visited these extensive nurseries last July. They are situated in West Cambridge, a few miles out of Boston, and contain upwards of 35 acres of a great variety of soil, from a light sand to a heavy loam, lying upon a substratum of heavy clay, varying in its depth from 2 to 10 feet from the surface. This substratum is of great service to the nursery, as a sufficient quantity can be brought up any time by the trench plow or deep spading, to temper the surface soil to such a consistency as to suit any variety of shrub or tree; and the ground being thoroughly sub-drained, the operations of the nursery are never impeded by an excess of moisture. The ground slopes from the south-west to north-west, and is exposed to all the cold winds of the country, which the Messrs. Hovey think is quite an advantage in enabling them to rear hardy trees.

Mr. C. M. Hovey has recently returned from an excursion to Europe, a very interesting account of which he has published in a series of numbers in his Horticultural Magazine. While abroad, he made arrangements to add largely to their collection of fruits, &c. Especial attention is given here to pears, they having the enormous number of 400 to 500 different kinds, from every good source in Europe and in our own country, for the purpose of testing their genuineness and qualities. Some of these we saw in bearing, and very fine specimens they were. We think they will have some new and choice ones for sale in a year or two. It is their intention to reject the indifferent, and propagate the good varieties only. We noted several other kinds of choice fruit trees here, among which are the May and new and black Bigareau cherry; the Icknorth, Imperatrice, Felleberg, Royal Nouvelle, Thomas, and other plums; Fastolf raspberry, Victoria currant, &c., &c. We found the Victoria rhubarb here of immense size, and of fine quality. This, with Downing's seedling, which is an earlier variety, are considered the only two sorts now worth cultivating by those who desire a superior quality of food.

The Messrs. Hovey are very careful about their work in the nursery, never using the plow or the cultivator, but instead of these implements, the spade. They think that they can thus bring forward their trees in a superior manner, the ground is so much better worked. As we have no experience in this matter, we must leave nurserymen to decide for themselves which are the best implements for their use.

They have originated another seedling strawberry, which they call the Boston pine. It is of fine flavor, though not so large as the Hovey seedling.

The green-house department here is very extensive. The large conservatory, or show house, is of a chaste, neat architecture, 84 feet long, 22 feet wide, with a span roof, and well constructed throughout, being one of the most expensive in the country. Another large house is 84 by 25, with a span roof. Besides these there are some smaller houses, making a rich and varied display of plants. The camellias were worthy of all admiration.

upwards of 2,500 varieties of the best foreign and native, some of the largest of which we noted were 8 to 10 feet high. Nor was less attention given to roses. Here we found 1,200 varieties, the most superb of which we thought was *La Reine*—worthy indeed of being the queen of her species. Messrs. Hovey & Co. have taken the first premiums of the Massachusetts Horticultural Society for three years past, for the best show of rare roses, and if we may be permitted to judge by what we saw here, they well deserved them.

Mr. C. M. Hovey politely conducted us over the premises, and pointed out many other things worthy of notice; but we regret to say, that the weather was excessively hot, and we had been so greatly fatigued by several other excursions during the day, before reaching these nurseries, that we felt little inclination to take notes, and have doubtless forgotten many things which we ought to mention. Yet this we remember, he has recently built a beautiful pointed Gothic cottage, and is now tastefully adorning the grounds around with choice flowers and shrubbery, and within this we were hospitably entertained, and shown one of the best horticultural libraries we have seen in this country. Many of the works are rare, and others exceedingly rich and gorgeous in exquisite colored engravings, of superior fruits and flowers. Mr. Hovey is the editor of the *Horticultural Magazine*, published in Boston; a work too well known and highly regarded by the public to need any further notice of ours.

These gentlemen have an agricultural implement and seed store in Boston, where they do an extensive business in their line. With all these varied occupations they doubtless have a pretty active life of it, and we can only hope it may prove as profitable to them as busy.

PARING PLOW.

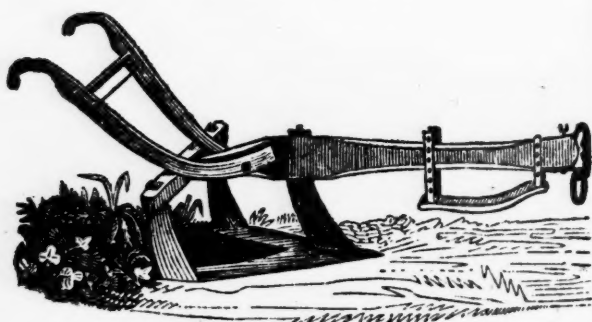


FIG. 41.

THIS plow is used for paring turf lands preparatory to burning. The share is thin and flat, made of wrought iron, steel-edged. It has a lock-coulter in the centre, and short coulters on the outward edge of each wing of the share, cutting the turf as it moves along into two strips about one foot wide, and as deep as required, there being a sliding apparatus put on the end of the beam instead of a wheel to regulate the depth of cutting. This is much preferable to a wheel for this particular purpose. After the turf is pared off into strips, men follow with sharp spades and cut it into suitable lengths, say of two or three feet. These pieces they then throw into heaps after drying of which they are burned, and the ashes spread broad-cast on

the land. Paring and burning is a very ameliorating process for stiff clay soils; it changes their mechanical texture almost entirely, and renders them friable and suitable for cultivation. The paring plow is also an excellent implement for cutting off meadow-bogs and grass bunches, and turf for covering a grass plot.

AMERICAN AGRICULTURAL ASSOCIATION.

SINCE our last the Society has had two meetings per month, instead of one. At that on the 18th of March, Mr. Pell moved that a Horticultural department be connected with the Society to make exhibitions, and stated that they would be well supplied and patronized, if premiums be offered to the amount of \$400 or \$500, and fruits, flowers, and vegetables be included in the exhibitions. The money necessary might be expected to be advanced by members, as the constitution does not allow the Society to appropriate money not in the treasury. A similar Society was commenced in Boston a few years ago, from humble beginnings, and the income of the exhibition the past year is said to have been \$18,000.

The resolution was adopted, and the following Committee appointed to carry it into effect:—R. R. Delafield, S. T. Jones, Alex. H. Stevens, T. A. Emmet, Wm. S. McCoun, Hugh Maxwell, J. F. Sheafe, Shepherd Knapp, E. K. Collins, James Boorman, Jas. Lenox, Ambrose Stephens, R. B. Parsons, and R. L. Pell.

Mr. Van Epps made some further explanations in regard to the silk business, showing that the multicaulis had done well in Washington, D. C., where he had 20 acres set out, and intended to increase his plantation to 100 acres. Dr. Underhill said that however well this variety of mulberry might succeed elsewhere, it could not be depended upon to stand the rigor of the New York winters.

Mr. Seeley addressed the Society on the influence of electricity on vegetation, and thought that the causes of failure were owing to the erroneous manner of applying it to growing plants.

At the meeting on the 1st of April, various grafts, seeds, and vegetables were offered for distribution among the members. Of the latter there were some fine large stalks of the pie-plant from Mr. Pell, who said that by selecting roots in the fall and placing them in the loam under the shelves of the green-house, you can have a supply of this plant from the latter part of February to June—whereas it is now to be had only during the latter month.

Dr. Gardner presented from the publishers, the Messrs. Harper, a copy of his *Farmers' Dictionary*:

Chancellor McCoun, having been called to the chair, read the report of the committee to whom was referred the offer of Gardner Howland, Esq., of his farm on Long Island, for the use of the Society. The report takes the ground that the Society is not sufficiently advanced at present in its means and resources to safely assume the responsibility of managing a farm; and that it will be advisable, in the present stage of its career, to confine its labors to the investigation of new truths, and the elaboration of important principles—leaving their practical application to individual enterprise. The

report expressed the hope that hereafter, when the Society found itself more completely established in all its departments, enriched in resources, and protected by legislative incorporation, it will be enabled to add to its other endowments a pattern farm. The report, with its accompanying resolutions, was adopted.

Dr. Stevens made some observations respecting the use of whale oil soap, and stated that much injury had resulted from its application to trees, by the too great acceleration of their growth. As to the worms, no liquid was efficient against them, for they deposit their larvæ under the inequalities of the bark. A solid coating was, in his opinion, the only efficient protection. Dr. Underhill had found security in scraping his trees in the winter with a dull hoe [a scraper for this purpose, such as is found at the agricultural stores, would be better], and then paint them with soft soap, and afterward he had found a solution of potash—a pound to six or eight quarts of water—answer every purpose.

Gov. Edwards, of Connecticut, then was called up, and gave a very interesting account of his raising an extensive variety of early and late pear trees from the seed. He recommended that fruit trees should be raised in this way, and stated the probability that the race of a tree became, in a certain number of years, enfeebled and finally extinct, and it was therefore necessary to renew the trees from the seed. [We consider this false doctrine entirely. If fruit trees are properly taken care of they will never run out, any more than animals or man himself.] He had also planted the seeds of the two native species of grape—fox and frost—from which he had raised a great variety of fine fruit. Altogether, cultivating the native fruits of this country had been too much neglected, and he earnestly recommended it as being among the subjects most worthy of attention. Dr. Underhill agreed with Gov. Edwards on the necessity of cultivating American fruit, especially in regard to grapes. Foreign grapes, except under glass, cannot be cultivated in our climate. The winter freezes them and the summer scorches them to death. All the hundreds of thousands of dollars expended in the experiments with foreign grapes had been literally thrown away; and yet there were nurserymen, who knew better, every spring advertising and selling foreign grape-vines which they promised would flourish in our soil. They ought to be and should be exposed. In regard to American grapes, they had already been much improved, and would doubtless improve for a hundred years to come. He had himself produced Isabella and Catawba grapes, which had been pronounced good by Frenchmen, Spaniards, and Italians; and they were now beginning to lay out vineyards for these varieties in Spain, France, and Germany. When we began to import them, Americans would doubtless find them of exquisite flavor!

Some further remarks were made on the subject of grapes, pears, &c., by Gov. Edwards, Dr. Mason, and Col. Clark. Dr. Gardner eloquently defended the European grape, and stated that it was a superior fruit when found wild, which was not the case with the American grape. His opinion was that the Isabella and Catawba were hybrids.

At the meeting on the 15th of April, the Corresponding Secretary, Mr. Green, read a letter from Baron Von Spech, of Upper Bavaria, accompanied by a treatise on sheep and another on hops, written by that nobleman.

Mr. Howland presented a basket of large, delicious strawberries, perfectly ripe, and of the most exquisite flavor and fragrance—together with a plant containing the berry in all stages, from flower to ripe fruit. They are the monthly strawberry. Mr. Howland received the plant from Mobile about eighteen months since. The plant is very healthy and vigorous, and bears luxuriantly.

Mr. Bradish presented for distribution and experimental planting a small parcel of potatoes from Ocaña, a table land in the highest part of New Grenada, S. A., and in about 30° lat. N. They were dark in color, and of small size.

Mr. Griffin detailed some experiments he had made last summer with various kinds of manure upon corn. He planted corn with guano, poudrette, stable-manure, and ashes. That with guano was far the best, poudrette next, and ashes last. Some of the corn which he had soaked thirty-six hours before planting, in guano-water, grew the greenest and thriftiest; but he did not know that it yielded any more than that guanoed in the hill. The ground was clayey, and not particularly adapted to the potato.

Mr. Howland had tried an experiment with corn last year. He divided a ten-acre lot into three sections. The first he gave a top-dressing with stable manure planting; the second lime before plowing; the third he first plowed and then dressed with lime. This he found to be decidedly the best.

Mr. Lawrence exhibited a model of his newly-invented park-gate, which can be opened without dismounting. It is very ingenious and simple, and must work well.

Dr. Gardner mentioned that some noise had been made in this country regarding a new kind of provender used in Germany, and which was said to be far more nutritious than any other kind of green fodder, not excepting clover. This was known under the name of spurry, and in several instances persons had sent to Europe for the seed. This was quite unnecessary. The plant is indigenous here, and well known to farmers as infecting corn and wheat fields. It is known as corn spurry; and if even half the wonders told of its nutritiousness by our friends in Germany be correct, it is worthy of attention by our farmers. At the Doctor's suggestion, a committee was appointed to make some experiments on this subject. After some little farther business, the Society adjourned, to meet on the first Wednesday evening in May.

MANURE.—Cart out all the manure on your premises as fast as possible, and spread it broadcast upon your grass lands or plow it under for hoed crops. It is fast losing its most fertilizing portions in the sun and rain, and the sooner you get it on to your lands and covered up, the better. If left to rot in the barn yard it fertilizes the air, and passes into your neighbors' crops at the expense of your own. No good farmer will neglect his manure heap—it is his mine of wealth.

DISEASES OF POULTRY.

BEING a subscriber to the *Agriculturist*, and seeing a great many articles on the breeding, rearing, and diseases of poultry, I thought I would relate an experiment I made on a fowl of the Poland breed, if you saw fit to publish it for the benefit of those who may have fowls afflicted in the same way.

I noticed one of my hens drooping for two or three days, and when I went to feed the fowls, she would not eat. I therefore concluded something must be wrong. I took her up and found her crop perfectly full. I then came to the conclusion that she was crop-bound, and she might get over it in a day or two; but she continued to get worse, and was now in the last stage of existence. I now made an incision through the breast, into the crop, of an inch long, when I found the passage from the crop to the gizzard completely stopped up. I removed that, took two stitches in the crop, kept the hen in a warm place for a week, fed her on warm, light food, and she is now as well as any fowl I have. This happened about three weeks ago.

H. T. LLOYD.

New York, No. 3 Prince st., Feb. 4, 1846.

We knew an instance of a valuable hen being in the same predicament as the above, from swallowing a large piece of India rubber. She was cured by making an incision in her crop, and taking it out. There is no danger whatever in performing this operation, provided the incision is immediately sowed up, and the fowl properly cared for till well. Fowls, both young and old, are very apt to overstuff their crops, especially when they get their food irregularly, and we have no doubt that many more deaths arise from this cause than is generally supposed.

SALT.

Its value as a fertilizer—its supposed efficacy for the Potato disease.

The value of salt for agricultural purposes has long been known both in Europe and in this country, and why it has not been more generally used is beyond my comprehension. More than one hundred and fifty years ago, Sir Hugh Platt, an eminent writer of the day, speaks very decidedly of the benefits which might be derived from the practice of sprinkling salt upon land, and calls it "the sweetest, and cheapest, and the most philosophical material of all others." He relates the case of a man, who in passing over a creek on the sea-shore, suffered his sack of seed-corn to fall into the water, and that it lay there until it was low tide, when, being unable to purchase more seed, he sowed that which had lain in the salt water, and when the harvest time arrived, he reaped a crop far superior to any in the neighborhood. The writer adds, however, that it was supposed the corn (grain) would not fructify in that manner, unless it actually fell into the sea by chance; and, therefore, neither this man, nor any of his neighbors, ever ventured to make any further use of salt water! [So much for superstition! ED.]

That salt is an excellent manure, experience, the most satisfactory of all evidences, clearly proves.

It is stated in an English publication, that "a farmer in the county of Sussex, some years since, had a field, one part of which was very wet and rushy, and that the grass produced upon it was of so sour and unpleasant a kind, that the cattle would not graze upon it; he tried several methods to improve it but to little purpose; at last hearing of the benefits of salt as a manure, he determined to try that; for which purpose he procured a quantity of rock salt, which, in a random way, without any regard to the precise quantity, he threw upon the rushy ground, fencing it off from the other part of the field, the effect of which was a total disappearance of every kind of vegetation. In a short time, however, it produced the largest quantity of mushrooms ever seen upon an equal space of ground in the country. These, in the spring following, were succeeded by the most plentiful and luxuriant crops of grass, far exceeding the other part of the field in richness of verdure and quickness of growth; the cattle were remarkably fond of it, and though the salt was laid on it twenty years before, this part is still superior to the rest of the field."

From the information which I have been able to collect, I am inclined to believe that salt, when sparingly applied, is valuable as a fertilizer, and useful in killing the grub and wire worm, which often injure, and sometimes even destroy, whole crops; and it has been found by experiments the past season, that the scab or disease which has proved so disastrous to the potato crop in all sections of the country, has not been found upon land that had a proper dressing of salt.

Judge Hamilton, of Schoharie, informed the writer, that he had found great advantage from using salt on his potato ground last spring. After plowing, he caused four bushels of salt to be sown on the furrow, upon one acre of the field, and harrowed in. Potatoes were then planted. Part of the field was not salted. Although the season was remarkably dry, the salted acre was observed to maintain a green vigorous appearance, while the other part of the field looked sickly and stunted. On lifting them in the fall, those potatoes, where salt was applied, were of good size, smooth skin, sound, and of good quality, and yielded a fair crop, while of those on the unsalted part of the field, although the soil was fully equal to that of the salted portion, the yield was considerably less, potatoes small, and much eaten by worms. His neighbor had a field of potatoes on the opposite side of the road, soil similar to his own, who planted them in the usual way; the consequence was, his crop was small in size, inferior in quality, and most of them rotted soon after digging—they were diseased.

Doctor Bogart, who has charge of the Sailors' Snug Harbor, on Staten Island, informed me that he applied four bushels of salt to one acre of his potato ground, last spring, and thinks he derived great benefit from it. Though the crop was not a large one, the potatoes on the salted portion were of much better size, skin smooth, and free from disease. The vines were more vigorous, remained green, while those on land of the same quality adjoining, which was not salted, shrivelled and died prematurely; the potatoes small and soggy, and produced less.

C. W. Johnson, a distinguished agricultural

writer, strongly recommends salt as a manure, at the rate of from ten to twenty bushels to the acre, to be sown two or three weeks before the seed is put into the ground. He says the benefits are as follows: "1st, when used in *small portions* it promotes putrefaction. 2d, By destroying grubs and weeds. 3d, As a constituent on direct food. 4th, As a stimulant to the absorbent vessels. 5th, By preventing injury from sudden transitions of temperature. 6th, By keeping the soil moist."

It would seem from all the facts I have been able to collect, that salt corrupts vegetable substances when mixed in small quantities, but preserves them when it predominates in a mass; that, in dry seasons, its effects are more apparent, and whether it attracts moisture from the atmosphere, or whether it acts as a condiment or stimulant, is of little consequence, so long as its effects are certain.

On account of the small quantity of salt, in weight, required for manuring lands, it is no considerable recommendation, because, on that account, it may with ease be conveyed to the most rough, steep, and mountainous parts, to which the more bulky and heavy manures most in use could not be carried, but with infinite labor, and at an expense far exceeding all the advantages to be effected from it.

Salt alone is considered by some rather too severe and harsh in its nature; but mixed with ashes, say six of salt and ten of dry ashes, well beat up together, which is sufficient for an acre, and spread upon the furrow and harrowed in, one particle incorporates and mollifies the other, and if conveyed into the earth by a soapy, smooth method, will prove the real enricher the earth wants, to send forth vegetation.

C. N. BEMENT.

American Hotel, Albany, April, 1846.

SOUTHERN CROPS AND CULTURE.—No. 2.

THE main crop in this section is cotton, generally; it takes up about two-thirds of the cultivatable labor of the farm. I presume, as the leaf is large, thick, and hairy, the stalk also being hairy, that it must take from the air a larger proportion of its organized material than does our own corn, grain, or grass. As the leaves of all plants contain a larger proportion of saline and earthy matter than does the stalk, or even generally the fruit, and as we return the leaves and stalk to the soil, also, have I not some ground to suppose, if I return all my cotton seed, that I will keep up the fertility of the land, as it was at first—the peculiar inorganic matter that forms the matter alone excepted—and even then, there being so little taken away that the top is somewhat recompensed by occasional additions from accidental sources. If we judge of the leaf of the cotton plant by the willow, we would not lose very much by even removing the cotton stalk. The willow contains 4 1-2 lbs. of saline and earthy matter, whereas the leaves contain 82 lbs. to the 1,000—so says Johnston. But the advantage is not only returning of the salts—supply of organic food—but the stalks tend to loosen the land, of course to render it lighter and less adhesive.

As to the turning under of corn-stalks, cotton-stalks, and pea vine, there is no planter in the South will object to it; but there are many who

think plowing in green oats or rye would be injurious. I have done this to a greater or less extent for several years, and I well remember of a ten acre patch of oats that I plowed in, in the month of May, I think, and planted it forthwith to corn. The land showed a marked advantage for several years, and but for this would have been, ere now, worthless. I ask if our Mississippi farmers (planters I should say) do not plow in every spring a good coat of green grass? I ask of those who have the chick-weed—called in these parts "Jackson purslain"—if they do not plow it in?—I go still farther, and contend if the turnip be sown on fields at the rate of 1-2 to 1 pint of seed per acre, and fed on the land to sheep and cattle, that the land will not deteriorate. I am aware that a large majority of planters believe the turnip to be an exhauster, yet I cannot believe that it will prove so if used as we use them in this country. The turnip receives very largely of its growth from the air, being mostly composed of water, and not much over, though one-third is removed from the soil—scarcely what the root has gained from the air. We never feed our turnip lots so close as to remove the half, and then bring feed on the land; a portion is returned in the way of urine and dung. The residue is turned under before the seed-stalks have bloomed, and does good certainly, by keeping the land porous, if nothing else.

The cost of labor, with all these adjuvants, is very trivial; the sowing down in time is all that is required. I have grown as good rye without the land being plowed before as after, for that crop, as when the land was flushed and harrowed, rye not producing over 12 to 15 bushels per acre at this place.

In 1843 I sowed some 75 or more acres—this year I sow over 30. I am anxious that this thing should be prosecuted in the South, believing that a little help now will save our children's children, their ancestral all a rich legacy. And why not work thus for our children, as well as to add workers? If I can have my land entirely competent to raise \$40 per acre, will not my child be as well off as my neighbor, who leaves his child with double the number of hands, and land not capable of producing over \$20? The equality may not be in one year apparent, but would be ere the close of the next generation. But when it is considered that a plantation is under good hedges that will last for a century, under a good system of drainage, and then in good heart, will not the advantage be immense? There are too few who will look at the matter in its true light. They are fearful of the labor, of the present cost, without looking to the result. Every one who would reflect would know, that land retaining water would remain cold much longer than if it did not; let them place their hand in water and hold it up—the evaporation causes coldness. Again, a vacuum will not exist; if the land be full of water, air cannot penetrate it; but drain off the water, air will follow; if made light the air will fill every interstice, and thus will roots be furnished with more material for food. Yet even this is not all; when the food is too much diluted with water, it is like feeding the horse with fodder—there is nutriment, but too dilute—it requires too much aliment.

With all these important aids there is one thing

that is all important—*deep plowing*. By the natural course of events the richness of the top soil is washed out, it sinks into the sub-soil; lime sinks, marl sinks, clay sinks, thus leaving the top soil poor in lime, &c., and disposed to become poor and sticky. By deep plowing these are brought up, mixed, and the soil deepened; in proportion to the mixing and fine tilth will the air have access, and will the soil be rendered lighter and more open, and of course permitting roots to ramify and extend in search of food; thus causing a retention and circulation of moisture, more rapidly cooling in the night, and a greater deposit of dew, as well as earlier warmth in the spring.

I need not extend these remarks; your readers can find them elsewhere, and if they will examine, they will be as equally convinced as I am of their utility.

Nature herself pursues a rotation of crops. I have seen a waste field producing nothing save broom-sedge; in a few years it would be able to bear a crop of short-leaved pine trees. These grow, drop their leaves, and after years of labor, fit the land to produce a crop of oaks. These grow with more or less vigor, and we are told that after thriving for centuries, they sicken and die—"its entire race dies out, and other races succeed it." Let the hand of man, in imitating nature, have a care lest it runs one crop to the death, and unfits the land to produce aught save the ridge-grass; as barren fields amply testify all through the south.

M. W. PHILIPS.

Edwards' Depot, Miss.

MANURES AND CULTIVATION.

CONCLUSION of Mr. R. L. Pell's remarks at the January meeting of the American Agricultural Association, on manures and cultivation.

On cultivation, Mr. P. said:—On the 9th of October, 1844, I cleared the tops from a dug potato field—burnt them, and returned the ashes—with a view of sowing wheat. The seed was then prepared thus: soaked four hours in brine that would float an egg; then scalded with boiling hot water mixed with pearlash; passed through a sieve; distributed thinly over the barn floor, and a dry composition sifted on it composed of the following substances: oyster-shell lime, charcoal dust, oleaginous charcoal dust, ashes, Jersey marl, or blue sand, brown sugar, salt, Peruvian guano, silicate of potash, nitrate of soda, and sulphate of ammonia. The sun was permitted to shine upon it for half an hour, when the particles crystallized upon the grain. In this state it was sown at the rate of two-and-a-half bushels to the acre, directly on the unplowed potato ground, and immediately plowed in to the depth of five inches, with a Scotch plow; harrowed once: a bushel of timothy seed sown to the acre, and harrowed twice. At the expiration of fifteen days the wheat was so far above ground as to be in advance of some which had been sown on the 1st of September—thirty-nine days earlier, in the usual manner, without any preparation. Near it I sowed wheat prepared, on turnip and carrot ground, the tops not having been removed, and plowed the whole in together with like success. Still adjoining I sowed three bushels to the acre in a dry state, on potato ground; plowed and har-

rowed first; wheat then sown and twice harrowed; the first parcel, although plowed in to the depth of five inches, was 2½ inches high before the last appeared above ground, although the whole field received the benefit of the following composition sown by hand, at an expense of two dollars per acre, viz.: stable manure, dry charcoal dust, hickory wood soot, bone dust, oleaginous charcoal dust, oyster-shell lime, decayed leaves, leached ashes, unleached ashes, guano, sal soda, nitrate of potash, fine salt, poudrette, horn shavings, refuse sugar, ammoniacal liquor, blood, sulphuric acid, magnesia, plaster from walls ground, decayed grass, decayed straw, decayed weeds, fish, refuse oil, sea-weed, oxide of iron, and oxide of manganese. My object was to contribute to that growing crop every substance required for its growth. It is possible that ten or twelve of the above named substances might have produced the same effects. The wheat raised by the experiment just detailed produced flour containing 18 per cent. of gluten.

In 1843 I sowed thirty acres with prepared wheat, and top-dressed it with charcoal dust. It grew rapidly, was not attacked by rust, mildew, or blight, when fields near it were almost destroyed. A small portion of the lot, which had received by accident a large supply of charcoal dust, produced at the rate of 78½ bushels to the acre. I cut it when the straw presented a yellow appearance four inches above the ground. At that stage of its growth a milky substance could be expressed readily from the kernels. It was allowed to remain three days in the field, when it was carried to the barn, and threshed immediately. It weighed nearly 64 lbs. to the bushel, and sold by weight for 12½ cents above the market price.

A few acres were left standing, and cut three weeks after, when the farmers in the neighborhood harvested *their* wheat. The grain was small, shrivelled, and weighed 56 lbs. only per bushel; the straw had lost its most nutritious substances; was much lighter than that cut earlier, and consequently less valuable. I believe that after the stem turned yellow near the ground, there being no connection between the root and tassel, the kernel wastes daily. By cutting early there is preserved in the straw all its nutritive matter, and thus it is rendered almost as valuable for fodder as hay.

In conclusion, Mr. P. said that his processes looked not only to results through science, but to economy in expenditure.

FENCES.

WHEN you commenced your articles on fences, early in the last volume, I hardly had sympathy enough with you to read them attentively. I was not vexed (as it seems some of your readers were), I rather ridiculed your notions, and passed them unheeded. But now, having spent more than \$150 the past summer, in enclosing my farm with a new and stout fence, I confess I have considerably changed my mind.

I purchased a farm where the fences were miserably poor. It was said a crop had never been harvested there without more or less injury from unruly cattle. Indeed, the domestic animals all about seemed to regard it as "free plunder." The first thing I did was to hire two men, and com-

mence enclosing the whole farm (wood lot and all) with a stout fence. It took us several months of hard labor, to the neglect of other needed improvements. It took also a good share of the valuable timber from the whole lot. The fence is finished—the cattle keep their own side. This is some satisfaction. But when I remember how much it cost, in time, money, and timber, and remember, too, that it is all to keep others' cattle out, not my own in—that it is a direct and heavy tax to protect me from what ought never to be allowed—cattle on the common, I repeat, I begin to have considerable sympathy with your anti-fence making articles. I wish you great success in convincing the farmers of the injustice of this whole matter. By the time this fence decays, I hope there will be such a revolution as to make it needless (as it will be impossible for want of materials) to rebuild. If the Agriculturist shall effect such a change, it will save millions to this people. T.

Ohio, January, 1846.

GARDENING.—No. 3.

DURING the reign of Henry V. of England, in the beginning of the 15th century, King James of Scotland was a prisoner in Windsor castle for several years. In the poem written at that time by that monarch, he gives the following account of a royal garden there:—

Now was there maide fast by the touris wall
A garden faire, and in the corneris set
Ane herbere greene, with wandis long and small
Prailit about, and so with treeis set
Was all the place, and hawthorn hedges knet,
That lyfe was non, walkyng there for bye
That myght within scarce any wight espye.

Hampton Court was laid out about the middle of Henry the Eighth's reign (1530), by Cardinal Wolsey. The labyrinth, one of the best which remains in England, occupies only a quarter of an acre, and contains about half a mile of winding walks. It is of great intricacy.

Chatsworth, the splendid seat of the Duke of Devonshire, was laid out in 1670, from a design by the artist Le Nôtre.

Hopetown House is situated on the banks of the Frith of Forth, a few miles west of Edinburgh. Both on account of the elegance of the mansion itself, and of the magnificence of the scenery with which it is surrounded, it is considered one of the most princely residences in Scotland. The park contains 1,700 acres, of an irregular surface, and abounding in trees. The pleasure grounds were laid out in the years 1725 to '30, and appear to have been designed in the Dutch style. There is a certain stateliness about the grounds which harmonizes well with the aspect of the mansion itself.

The greatest curiosity in gardening in Ireland, is the Hanging Garden of Limerick. This contains an acre of ground, which is covered with lines of arches rising in terraces one above another; the lowest, 25 feet, and the highest, 40 feet. Over these arches is placed a layer of earth, five feet thick, and planted with choice fruit trees and flowers. The space under the arches is employed as a cellar, and will hold nearly 2,000 hhds. This

work was commenced in 1823, and was completed in 5 or 6 years, at an expense of \$75,000.

The first public botanic garden in England was founded at Oxford in 1632, by Henry, Earl of Danby, who gave, for this purpose, five acres of land, built green-houses and stoves, and handsomely endowed the establishment. The botanic garden at Kew was established in 1760 by the Princess Dowager of Wales, the mother of George III. The botanic garden of Edinburgh occupies 16 acres, and includes extensive hot-houses and other desiderata, in a superior style.

The garden of the Emir Facardine, at Beyroot, is described by Maundrell as "a large quadrangular spot of ground, divided into sixteen lesser squares, and planted with citron trees."

The gardens of Damascus are described by Egmont and Heyman as perfect paradises, being watered with copious streams from Lebanon, and shaded with palms and elms, whose shade was exquisite in that burning climate.

The gardens of Persia are said to vie in beauty and luxuriance with any in the world; and to them the Persians devote their principal attention. When Mirza Abul Hassan was ambassador to the court of St. James', one of his greatest satisfactions arose from occasionally walking, unattended, in Kensington Gardens. The gardens of Kerim Khan are thus described in Morier's *Journey to Persia*. "An immense wall, of the neatest construction, encloses a square tract of land, which is laid out in walks, shaded by cypress and chenar, and watered by a variety of marble canals, and small artificial cascades. In the centre of the garden is one of the principal summer houses. There is a basin in the middle of the chief room, where a fountain plays continually, refreshing the air. The garden is now (1812) falling into decay; but those who saw it in the reign of Kerim Khan delight to describe its splendor, and do not cease to give the most ravishing pictures of the beauty of all the environs of his capital."

One of the earliest accounts of Chinese gardens is thus given by Père le Compte, who resided for some years in that country as a missionary. "The Chinese appear still more to neglect their gardens than their houses. They would consider it as a want of sense to occupy their grounds only in parterres, in cultivating flowers, and in forming alleys and thickets. The Chinese, who value order so little in their gardens, still consider them as sources of pleasure, and bestow some expense in their formation. They form grottoes, raise little hills, procure pieces of rocks, which they join together with the intention of imitating nature. If they can, besides these things, find enough of water to water their cabbages and legumes, they consider, that as to that material, they have nothing more to desire, and content themselves with a well or a pond." Such was Chinese gardening anciently, but mark their improvement. In Dobell's *Travels* (vol. 2, p. 314), we find that "the houses are surrounded by extensive and beautiful gardens, adorned with artificial lakes, rocks, cascades, buildings of various descriptions, walks, bridges, &c. In the ornamenting and beautifying of gardens the Chinese excel all other nations. By means of a variety of winding walks

they make a small place appear twice as large as it really is. Innumerable flower-pots, containing a great variety of beautiful asters, of which they are very fond, are sometimes arranged in a labyrinth. When the asters are in full bloom, the pots arranged handsomely, near a piece of water, and the walks and alleys well lighted, at night, with variously colored lamps, a Chinese garden has the appearance of one of those enchanted places we read of in the Arabian tales."

The country houses and gardens of the Pacha, and most of the rich inhabitants of Grand Cairo, are situated at Boulak. They are said to be well stocked with date and other palm trees, and with the grape and some other vegetables.

Of the state of horticultural science in the North of Africa, some idea may be formed from the following extract, given by Beechey, from a Moorish horticultural work. "When a palm tree refuses to bear," says the Moorish author, "the owner, armed with a hatchet, comes to visit it in company with another person. He begins, by observing aloud to his friend, in order that the date tree may hear him,—'I am going to cut down this worthless tree, since it no longer bears me any fruit.' 'Have a care what you do,' replies his companion, 'for I predict that, this very year, your tree will be covered with dates.' 'No, no,' cries the owner, 'I am determined to cut it down; for I am certain it will produce me nothing;' and then, approaching the tree, he proceeds to give it two or three strokes with the hatchet. The friend again interferes, and begs him to try one more season; adding, that if it does not bear then, he will let him do as he pleases. The owner at length suffers himself to be persuaded, and retires without proceeding to further extremities. The threat, however, and the few strokes inflicted with the hatchet, have always the desired effect; and the terrified palm tree never fails to produce, the same year, an abundant crop of dates."

The Isle of Bourbon contains a botanic garden, which has been richly endowed by the French kings; and contains, besides the productions of the island, a splendid collection of African and Asiatic plants. It is situated on a rising ground, in the middle of the town, and occupies fourteen acres.

The gardening of North America is necessarily that of Europe, so far as soil and climate will permit, and, as is the case of other arts in any new country, the useful departments are more generally attended to than the ornamental.

"Horticulture in the United States, it will readily be perceived, has had to contend with many obstacles. Separated from the old world by a wide ocean, it was for a long time with difficulty that any of the rarer and finer vegetable productions of the eastern continent, could be brought out by emigrants. Whatever has been done has been effected by private means, and to gratify private taste. This, however, at the present time, is so much as to afford cause of the highest gratification, and gives reason to hope for the fulfilment of every reasonable anticipation for the future." (*Downing.*)

Belmont Place, at Watertown, in the vicinity of Boston, is a beautiful residence, and was formerly known as the 'Preble Place.' It is in an excellent situation, containing about one hundred acres of land, consisting of a lawn, gardens, and pleasure

grounds. It is one of the finest in the country, and will probably, before long, vie with the famous English gardens of Sion House and White Knights.

Hawthorne Grove is a fine place, consisting of about fifteen acres, containing green and hot-houses, and other forcing pits. Monataquot, in the vicinity of Braintree, is noted for its collection of fine fruits. Brighton Nurseries are situated about four miles from Boston. The collection of herbaceous plants, ornamental shrubs, forest, and fruit trees, is one of the best in New England.

The garden of Mr. Tudor, in the vicinity of Hartford, is neatly laid out in flower beds, and a green, and has one of the best collections of hardy, herbaceous and choice green-house plants, anywhere to be seen.

In and around Providence, R. I., there are many fine gardens and country residences. The principal nursery is Dier's, about four miles from the city, and contains many select varieties of fruit and other trees.

The only botanical garden of any extent in New England, is situated at Cambridge, and is connected with the University at that place. It was commenced in 1802, by subscription, but it afterwards received aid from the State; and, in commenting on this fact, the New York Farmer makes use of the following language—"Of a very enlightened legislature, who, not mistaking false maxims of economy for true ones, saw, in the destruction of a great public work, great loss; deeming that the riches and prosperity of a state are as much promoted, to say nothing of its reputation, by wise and generous establishments for the promotion of knowledge, as by any financial measures."

In the neighborhood of the city of New York are many fine gardens and residences. The nursery and green-houses of Mr. Hogg are worthy the imitation of every gardener in the United States, on account of their neat and orderly appearance. The seat of N. Prime, Esq., is noted for containing one of the finest ranges of forcing houses in the vicinity of the city. Messrs. Shaw & Thorburn, have a nursery and green-houses at Astoria, containing about twenty acres, rich in trees and plants. The well known and extensive nurseries and green-houses at Flushing, L. I., are among the oldest and most extensive in this country. West Farms is situated about 4 miles from Harlem. The grounds, which are laid out in a fine, open manner, may be considered of the first order. Long avenues of flower-borders and walks, with a good proportion of lawn, together with summer-houses, seats, and the like, very appropriately arranged, render it a delightful summer residence. The establishment of Judge Buel, at Albany, and the nursery of A. J. Downing at Newburgh, are fine places, and worthy the attention of all lovers of horticulture.

The most distinguished garden in the neighborhood of Philadelphia is that now owned by Mr. Carr. It was established in the early part of the last century, and is the second in age in the United States. Here was collected together, by the celebrated naturalist, John Bartram the elder, nearly all the indigenous plants and trees of North America, the superb specimens of which, at this day, stand unrivalled in any part of the country. Messrs. Landreth's nurseries are situated about two

miles from the city, and contain about forty acres of land; part of which is devoted to the raising of garden seeds.

Extensive gardens and nurseries may now be found at Baltimore.

Mount Vernon, on the Potomac, was the seat of Gen. Washington, "first in peace, first in war, and first in the hearts of his countrymen." The extent of this place is about ten thousand acres, much of which is yet covered with forest.

Monticello was the residence of President Jefferson. It is situated on the summit of an eminence, commanding extensive prospects on all sides.

"At Charleston, the houses of the suburbs are, for the most part, surrounded by gardens, in which orange trees with most splendid ripe fruit, monthly roses in full bloom, and a variety of other very flourishing plants, display themselves."

"At Cincinnati, there is a public garden, where the people go to eat ices and look at roses. For the preservation of the flowers, there is placed at the end of one of the walks, a sign-post, representing a Swiss peasant girl holding in her hand a scroll, requesting that the flowers might not be gathered."

At New Orleans are beautiful gardens, both public and private, filled with tropical and other choice flowers and plants.

A conventual garden at Mexico is described by Humboldt, as one of the finest he had ever seen. In the garden, were immense groves of orange trees, peaches, apples, cherries, and other fruit trees of Europe. The botanic garden of Rio is situated about 8 miles from the town. The tea shrub of China, first introduced into this garden, has begun to be cultivated in the interior of the country.

"The botanic garden of Jamaica, West Indies, was originally begun by Hinton East, Esq., and afterwards bought by government and enlarged, so as to contain about 70 acres. One of the objects of its establishment was to preserve, without artificial means, the productions of various climates. Such a project could only be executed in a tropical latitude, where the various elevations of the ground would regulate the required temperature."

L. T. TALBOT.

PLANTING A VARIETY OF CROPS.

SOMETIMES, farmers devote most of their tillable soil for, and expend most of their time upon, one or two main crops. Thus, some men depend mainly upon the wheat crop—others upon grass, and the southern planter upon cotton. Now, it often happens that an unfavorable season destroys particular crops, and thus often a whole year is lost, where one crop (or two) receives the farmer's sole attention. Last year, for example, in this section, wheat was very nearly destroyed, hay entirely, and fruit and some other crops were very light. On the other hand corn was never better. Buckwheat, millet, flax, and vines, generally produced well. Potatoes yielded well, but were injured by the disease after gathering.

Now the object of this note is to recommend to farmers to plant a greater variety of seeds, so that when one fails, others will supply their places. Those who had only grass land last year had to nearly give away their cattle, or drive them at a great expense to another part of the state to be win-

tered; while those who sowed corn and millet for fodder, have wintered their stock as easily as usual. This is only an illustration. The principle extends to the whole circle of tillable crops. If one or two alone are cultivated, there may be an entire failure, causing much suffering and much loss. If a variety, some will always succeed, and these may be substituted for the rest.

Besides, the times for planting and harvesting the different kinds occur, the one after the other, so as to divide the labor through the season. Thus, spring wheat and oats should be sown early; corn planted after the danger of frosts is over; corn for fodder and millet later still. And these (and others) all have their different seasons for harvest, each in its time. Whereas, when one crop is the main one, there is one season of great hurry in seeding, and another in harvest; teams and men have to be driven to excess then, and be comparatively idle the rest of the time. This surely is not wise. I recommend, then, that farmers add greatly to the variety of the crops they annually cultivate, and "give each its portion in due season."

Ohio, March, 1846.

T.

ANALYSIS OF CLOVER AND ITS MANAGEMENT.

THE following article was addressed by Mr. Horsford, of Albany, now with Prof. Liebig, at Giessen, in Germany, to Mr. T. W. Olcott, of Albany, and read at one of the agricultural meetings at the capitol in that city during last month.

Giessen, January, 1846.

In the progress of the last term, while other chemical labor was going forward, I made an analysis of red clover, and accompanied it with an investigation, which I record below.

To the latter I attach in its isolation no special value; inasmuch as the circumstances in which it was conducted deprive it of perfect scientific exactness. I make it the basis, as you will observe, of explaining one or two chemical processes.

It is well known that the juice of clover-heads contains more or less sugar. The nectaries of the fully developed head are especially rich in a honey-like liquid, which bees gather. In cutting the clover when the heads are fully formed, but not ripe, the sugar of this honey will be secured. The water will evaporate, leaving the sweetness with the vegetable fibre and other organic matters, to be fed to stock. If the clover be cut before the heads begin to develop, the sugar, if formed, must be in the stems and leaves; if not cut until the seeds are ripened, the sugar may have accomplished one of its supposed ends—that of keeping up a higher temperature within the seed for the elaboration of its various parts, and thereby have been destroyed.

It was my purpose to ascertain how much sugar, or rather the relative amounts of sugar, there might be at the above named three stages of the development of clover. Experiments with the first two kinds were made. The clover crop being nowhere permitted to ripen, I was unable to submit the inquiry concerning the third to the test of experiment. I cut clover exactly at the surface of the ground, on the 16th day of June, just as the tufts of leaflets enclosing the heads were discernible. These I chopped to fineness, and placed a weighed

portion in a flask, connected through the medium of a chloride of calcium tube, with a Liebig's potash apparatus; having previously thoroughly mixed with the clover a small quantity of fresh, carefully-washed beer yeast, and covered the whole with water. Fermentation went briskly forward for several days.

On the 1st of July, when the heads were fully developed, I cut another portion, and having finely chopped, weighed and mixed with it yeast and water, connected all with another potash apparatus, as in the other case.

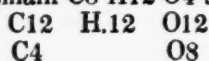
Without or beyond both the potash tubes, were tubes of hydrate of lime, to prevent the absorption of carbonic acid from the air.

On the 30th of July, the fermentation being quite done, the potash apparatus of the last mentioned [quantity of clover] had increased in weight by 1.15 per cent. of the whole weight of clover subjected to fermentation. The first mentioned had increased only by 0.80 per cent. Thus the amount of carbonic acid, evolved from the mass last cut, was almost half as much again as that from the quantity first cut.

It may be well, since I have introduced so many expressions betraying the laboratory, that I endeavor to explain the mode by which I hoped to ascertain the amounts of sugar in the two kinds of hay.

Most persons are familiar with the fact that distillers ferment large quantities of grain to obtain alcohol. The process to which the grain is subjected, effects a decomposition of the sugar of the grain, into carbonic acid and alcohol.

The sugar susceptible of this decomposition is grape-sugar—that to which the sweetness of apples is due, and which is manufactured in enormous quantities on the continent of Europe from the starch of potatoes. Its composition, when dried at 212° from analysis, is Carbon, 12 atoms; Hydrogen, 12 atoms; Oxygen, 12 atoms; or, in the language of chemistry, $C_{12} H_{12} O_{12}$. If we take from this 4 atoms of carbon, and 8 atoms of oxygen, there will remain $C_8 H_{12} O_4$ thus:



$\left. \begin{array}{l} C_8 \quad H_{12} \quad O_4 \\ \hline \end{array} \right\} \begin{array}{l} \text{Equal to 2 atoms} \\ \text{of alcohol,} \end{array}$

the composition of alcohol being $C_4 H_6 O_2$.

The alcohol becomes the high wines; the carbonic acid floats over the fermenting-tubs and escapes.

Thenard has shown, by distilling and collecting the alcohol, and weighing the carbonic acid arising from the decomposition of a given weight of sugar, that the weight of the sugar and the sum of the weights of the alcohol and carbonic acid equal each other.

The alcohol may be permitted to go directly into acetic acid, as takes place with fruit, when exposed to air, or continued as alcohol by excluding the air.

Vinegar has the following composition: $C_4 H_3 O_3$. In order to its formation from alcohol, three atoms of hydrogen must be taken away, and one atom of oxygen added. This takes place quietly and slowly in cider and beer casks, as well as vinegar barrels, with which all are familiar. The housewife, to keep the vinegar on the increase,

adds wine, or whiskey, or cider, or maple sap, or molasses. All these contain sugar or alcohol. The sugar is resolved into alcohol and carbonic acid. The alcohol, however, does not continue as such, if the liquid be exposed to the action of the air, but goes into vinegar or acetic acid.

Decompositions have been so much and closely studied, that the results are perfectly understood. The causes of the decomposition are still matters of discussion.

The carbonic acid, to whose addition the increase in weight of the potash apparatus is to be attributed, indicates a certain amount of sugar from which it was derived. The larger per cent. of carbonic acid in one case corresponds to a larger per cent. of sugar in the clover.

I add the analysis of the ashes of the clover. From it may be seen one of the parts sulphate of lime (plaster of Paris) plays in the development of clover.

Franklin, anxious to convince our countrymen of the efficiency of plaster (sulphate of lime) manure, strewed a few handfuls of it in the form of large letters upon a clover field. In a few weeks the plants that had received it had so far out-grown, and had taken on a color so much deeper and richer than the others around, that the wonder of passers-by was naturally excited.

Of the whole plant, in its green state, the earthy ingredients or inorganic constituents

Equal	-	-	1.83 per cent
Of the leaves,	-	-	1.75 " "
Of the stems,	-	-	1.40 " "

The water in the green clover, determined by two experiments, was 83.55, and 83.58 per cent.

Of the dry plant altogether, the ashes

Were	-	-	11.18 per cent.
Of the leaves,	-	-	10.69 " "
Of the stems,	-	-	8.52 " "

Ingredients of the Ashes.

KO	(potash)	12.164	16.101
Na	(sodium)	1.414	1.874
NaO	(soda)	30.757	41.712
CaO	(lime)	16.556	21.914
MgO	(magnesia)	6.262	8.289
PO ₅ , 2Fe ₂ O ₃ ,			
(phosphate of iron)		0.506	0.670
Cl	(chlorine)	2.159	2.856
PO ₅	(phosphoric acid)	2.957	3.915
SO ₃	(sulphuric acid)	0.801	1.063
Si	(silica)	1.968	2.605
CO ₂	(carbonic acid)	22.930	
Sand and coal,		1.244	100.000

99.718
Loss or waste, 0.282

100.000

The sand was probably spattered upon the stalks by rain, and some coal remained after the most careful and long-continued burning.

The first column of figures contains the direct results of the analysis in per cent. The second column the results deducting the carbonic acid, and coal, and sand.

By the analysis we see how large a part is made up of potash, soda, and lime. Sulphuric acid is there; without its presence in the soil it could never have been among the tissues of the clover.

If it be an essential *irreplaceable* ingredient, as phosphoric acid is in the seeds of wheat and corn, it is readily seen how Franklin's selection of clover may have been peculiarly happy. I do not pretend to say that it is indispensable. A series of experiments only could settle such a question.

The large proportion of carbonic acid is particularly worthy of attention. Comparing it with the sum of all the other acids—the phosphoric, sulphuric, silic, and hydrochloric (of which the chlorine is given)—we see how far it exceeds them. Again, looking at the per cent. of bases, we see how very large the proportion when compared with the sum of the inorganic acids. This surplus of base was most of it united to organic acids. These, in the burning of the plant, have been destroyed. Their place has been wholly, or for the most part, taken by carbonic acid. Here is nearly 23 per cent. of carbonic acid. In an analysis of the ashes of sugar cane made at Giessen last summer, there was not a trace of carbonic acid. Such is the difference. In the sugar cane the per centage of silica was large. Timothy grass ashes gave also no carbonic acid, but a large per cent. of silica.

The moisture of green clover amounts to 83.55 per cent., and the clover contained sugar, a body capable of fermentation. What hints do these facts furnish to the farmer! If the clover be taken to the mow with this quantity of water, the water will furnish the means of that intestine motion among the constituents of the plant held in solution in the fibres of the stems and leaves, which is necessary to fermentation; and not only will the sugar be lost, but vinegar will be formed, souring the whole mass, and rendering it unpalatable to stock. If it be properly dried, the sugar as such will remain in the vegetable fibre, and go to nourish the stock, furnishing to horses, cattle, and sheep, an element whose combustion serves to keep them warm and furnish fat. (a)

But again—

The leaves contain 10.69 per cent. of ashes.

The stems contain 8.52 “ “ “ “

Now as the inorganic matters are more or less serviceable in the animal economy, the leaves, containing most of them, should be carefully preserved; and as the ashes of the whole plant, including the head, have 11.18 per cent. of ashes, it is clear that the preservation of the heads and leaves is decidedly more important than the stems. Hence the farmer cuts the clover, and instead of drying it in the sun, cocks it for a few hours, so that the vapor evolved from within, in the process of drying, shall keep the stalks and leaves without from becoming too suddenly dried and unnecessarily brittle.

In closing, I will state one of the results to which the experiments of Prof. Liebig are daily leading. In the spring preceding my arrival at Giessen, Liebig planted some grape scions under the windows of the laboratory. He fed them with the ashes of grape vines, or the proper inorganic food of the grape, as shown by analysis of its ashes. The growth has been enormous, and several of the vines bore large clusters of grapes in the course of the season, and all may have, as I did not particularly observe them until the grapes were gathered. The soil is little better than a pavement—a kind of fine gravel, in which scarcely anything takes root.

There are pots of wheat in different stages of their growth, that have been fed variously—some upon the inorganic matters they require, according to analysis of their ashes—others have had merely the food which is furnished by the soil. The results in numbers are not yet known, but from appearance we may readily judge what may be expected.

I may mention in this connection, that I gave to Prof. Liebig five varieties of American corn, all of which were planted, but not one of which came to maturity, though the first frost in Giessen was about the 20th of October. The climate is essentially different from ours. The heat of our summer is more intense.

The experiments of Prof. Liebig, mentioned above, are full of interest, not alone as sustaining the views he has advanced, but also as showing that the treasures in the shape of inorganic manures, heaped up in some quarters of the globe, may be made to equalize the fruits of labor in other regions.

E. N. HORSFORD.

(a) The discussion between Dumas and Liebig, relative to the formation of fat from sugar, has been settled in favor of the latter, by a repetition on the part of Dumas, of experiments made several years since by Liebig.

ROCKY MOUNTAIN SHEEP.

I AM a wool-grower in the State of Ohio, and being a great admirer of sheep, I have been very desirous of ascertaining whether there are not modifications of the *American Argali*, or the Rocky Mountain sheep, to be found among the native tribes of Indians, inhabiting the country bordering on that range. Capt. De Bonneville, and other travellers, speak of the Argali as being found in great abundance from the 50th degree of north latitude, down to California; and though their meat is said to be very tender and good, as they mostly frequent the lofty summits, inaccessible to man, they in a great measure escape the vigilance of the hunters, and must be very numerous. In this effort I have been unable to discover any sheep among the tribes, which were not originally taken from east of the Mississippi river, except in one case, and that a very interesting one. This tribe is called the Navahoe, and live about 300 miles north by west from Santa Fé. They inhabit what is called a gorge, in the Rocky Mountains, into which there is but one narrow winding passage, which they defend from intrusion with the utmost bravery; and having been really independent, they appear to have made more effort to add to their comforts than the other tribes around them. No white man has ever visited their residence, and it is said no Indians, except fur traders of the Delaware tribe, who are a very daring and enterprising race of people. These traders describe their houses—that they raise a great many sheep and cattle—have a large quantity of arable land, and cultivate it—have some knowledge of the arts, which they discover by the blankets which they make and sell in the market of Santa Fé.

These blankets are made from a very superior kind of wool, which they raise. It is said by those who have seen them, to be very fine, soft, and

silky to the touch, and sell in that market from \$25 to \$100. I have not been able to get any idea of the form of the sheep, their domestic habits, or the quantity of wool which they produce. But as these Delaware traders say they have a great many of them, and as they probably are dependent on their fleeces for their clothing, it may be pretty certain that they are well domesticated.

I have seen one man who has conversed with one of those traders upon the subject.

Is not this race of sheep worth an effort of the wool-growers of the United States to possess? I have been long thinking that we have been very remiss in our efforts to introduce the Alpaca; but I am much gratified in reading to-day in a newspaper, that the American Agricultural Association are now determined on importing 300 of that valuable animal. Success to the enterprise. It will be a great individual and national benefit.

Cincinnati, Feb. 20, 1846. NATH. SAWYER.

We sent the above letter for an answer, to Dr. Lyman, who has travelled extensively in New Mexico, among the Rocky Mountains, and in California. The following is his reply:

Northampton, Mass., March 6, 1846.

I will endeavor to answer, in as brief a manner as possible, the interrogatories of your correspondent. There are no modifications of the *Argali*, or "Rocky Mountain sheep," among any of the Indian tribes of the mountains, nor are there any kind of sheep among them, with the single exception of the Nabajo Indians, living due west of Santa Fé, and about 100 miles from that place.

The Nabajos raise very large flocks of sheep, but they are of the genuine Spanish breed introduced by the early conquerors. It is not fifty years since these Indians were entirely destitute of every description of stock, excepting a few wild horses which they caught out of the wild droves of the country as they needed them. In the time of the Viceroy, they were nomadic in character, like the other Indians of the mountains at present; but since this the character of the New Mexicans has so much deteriorated in every respect, that the Nabajos, naturally enterprising, have discovered their own superiority, and consequently have made free with the property of the Mexicans. The stock they now have is derived from what they obtained in their frequent marauding expeditions into the valley of the Rio del Norte. In fact they have so thoroughly drained the Mexicans, that they have left them almost entirely destitute of every kind of stock, except vermin and mongrel dogs—a few noble shepherd dogs still remain; while the Nabajos have become enterprising and energetic farmers, and capital stock-breeders—rich in sheep, mules, horses, and horned cattle. Some of the horses they breed are not surpassed by any on the continent. Their farming implements consist of a plow made of two sticks, tied together where they cross. These are drawn by oxen. A hoe of wood—a fork of wood also. The ground they cultivate is a light alluvial soil, easily broken, and annually flooded by the swollen streams of spring. They raise maize, beans, peas, onions, and pumpkins. They have an abundance of poultry also. They

dress in buckskin breeches and shirts, which are beautifully ornamented and fringed. The blankets they make are worn constantly thrown over the shoulders. For a more particular description see account I have given of them in Farnham's California, part 4th, pages 372-3-4.

The sample of wool you sent me looks very much like the New Mexican lamb's wool [from Mr. Watson, see current volume, page 110.—Ed.]—or like the under fleece of the sheep, which lies close to the skin, and is covered by the long part of the fleece. The fleece of the New Mexican sheep is long, coarse, and heavy, like mohair. The Nabajo sheep of course is the same, being the same kind of animal. What this fleece was when first imported by the conquerors of Mexico, I do not know, but probably much finer than now.

You call the above sample "Rocky Mountain wool;" it is so, inasmuch as the "Rocky Mountains" run into New Mexico, where the sheep which produce it are found; but you leave me to infer that it is the product of the "Rocky Mountain sheep," or *American Argali*, which is *entirely destitute of wool*. Its covering is of precisely the same character with that of the elk, deer, and antelope of this country. It has coarse hair, like bristles; any one who has seen a deer will understand me. The only close resemblance of the animal to a sheep is in the flavor of its meat, which is precisely like that of Southdown mutton—juicy, tender, and luscious. In shape, it has some resemblance to a Merino ram, but is much larger, say about three feet high, and four feet long. Their horns are remarkable for size and weight, averaging some 40 to 50 lbs.; five inches in diameter where they leave the head, and about three feet long, gradually tapering to the end, they curl like a ram's horns, but make three or more entire revolutions. The only difference between its skin and that of a deer is, that it is rather finer and softer; but it is used by the trappers and Indians for the same purpose of dress.

J. H. LYMAN.

Mr. Sawyer will find an engraving and description of a male and female *Argall*, or *Argali*, at page 128, Vol. 2, of Godman's American Natural History, third edition, published by Messrs. Uriah Hunt & Son, Philadelphia. These figures closely resemble deer, except they are greatly coarser in the head and other points, and their horns are like those of Merino sheep, saving that they are very much larger. One might almost think that the *Argali* was a cross between a huge, coarse Merino ram, and a female elk. Stuffed specimens of the *Argali* can be seen in our Museums.

CULTURE OF LATE POTATOES

THERE being a desire among farmers to obtain information on the different modes of cultivating the potato, with a view to escape the rot, I have concluded to throw my mite into the collection of experiments. A great yield was no part of the object. Having been unable to obtain potatoes of a good quality, I determined last spring to make an effort, not only to grow them free from the rot, but to get an excellent quality.

Early in April I chose a small piece of ground.

one-third of an acre only, rather a strong loam, with an easterly slope, from a field that had carried a corn crop two years in succession, and was more-over pretty well worn down by previous hard cropping, with but scanty manuring.

When the corn stumps were harrowed down, three bushels of bone-dust were sown over it, then plowed and harrowed again. Early in June, two waggon loads of dirt from the wood-pile ground were spread on it, and the piece was divided into three equal parts, each, of course, one-third of an acre. On the first division was spread unleached wood ashes, at the rate of 50 bushels to the acre. On the second, lime rubbish (old house wall) at the rate of 250 bushels to the acre; on the third, coal ashes at the rate of 60 bushels to the acre. A short time after, it was plowed and harrowed smooth, and planted with mercer potatoes (from down east), cut rather small, on the 18th of June, in rows three and a half feet asunder, and eighteen inches apart in the rows.

The weather continuing very dry, after the middle of July, the first and only hoeing, a thorough one was given without plowing between the rows. The vines did not grow large, but during the driest weather looked green and healthy.

Before digging (which was on the 17th Oct.) I took up half a peck from each division, that I might be able to test the different qualities, if any, produced by the three last applications. The result was, the coal ashes gave one per cent. more than the lime rubbish, and the wood ashes two per cent. above the coal ashes. The quantity was only at the rate of 120 bushels per acre. No difference in quality could be discovered; but they were altogether the best of the kind I have ever grown. Not a potato was affected by the rot, and not one was found hollow in the centre—a consequence unexpected, as heretofore my large mercers have very generally been unsound. ARCH'D JAYNE.

Setauket, March 2, 1846.

We should be pleased to learn from our correspondent what kind of soil it was on which he planted his potatoes, as coal ashes have been applied by several of our friends to the light gravelly and sandy soils of Long Island without effect. But on clayey soils, as detailed pages 55 and 107 of our current Vol., it seems that they were productive of considerable benefit.

STEEPING SEEDS.—The agricultural papers, from time to time, recommend the steeping seeds before planting, to facilitate their germination. This is always well when the ground in which they are planted is sufficiently moist. But when the ground is so dry (as is sometimes the case) as to extract the moisture from the steeped seed, it delays germination, if, indeed, it does not kill the seed. During the drought of last year, dry seeds generally sprouted sooner than soaked ones, and in some cases the latter dried and died in the ground. Hence the above caution (a). T.

Ohio, March, 1846.

(a) When it is very dry seeds should be planted deeper than ordinary; they will thus be in the region of moisture, and pretty sure to generate.

MAKING CHEESE.

Two years ago I was unacquainted with the practical part of cheese-making, and in order to hold on to the knowledge gained by experience, I commenced entering in a book the heat of the milk, and the heat of the air at the time the runnet was put in; each cheese was numbered, and any other remarks made which might be called forth by circumstances during the process, or until cheese was safely deposited on the shelf. On referring to my book for the past season, I find that all the cheeses from No. 76 to 106 (at which number we quit making), were of an excellent and pretty uniform quality. The variation of the atmosphere was from 60 to 90 degrees—the heat of the milk from 83 to 90, when the runnet was added, but mostly 85 or 86. I also find by referring to my book, that the cheeses from No. 1 to 75 were made from milk coagulated at a greater degree of heat, sometimes even as high as 96. The weather was mostly hot during the time these cheeses were made. They were not, however, of uniform good quality, some heaved up and became like loaves of bread in shape, others cracked, making excellent harbor for flies and other insects, and one or two landed in the hog-trough, not, however, from poverty, for richness seemed to be rather a fault of my cheese.

The only material difference between the cheeses made after No. 76, and those made before it, is, the different heat of the milk when the runnet was added. During the time our cheeses were good, our process was as follows: The milk 85 degrees—a small handful of salt to be added to every 10 or 12 gallons of milk. Let the runnet be strong enough to do its office in one hour, then cut the curd into squares with a long knife reaching to the bottom of the tub—spread a clean strainer over it, through which in ten minutes begin carefully to dip off the whey, by gently forcing down a bowl or tin pan—heat some of the whey first dipped off, when the curd has become somewhat compact, pour in some whey at such heat as will make the mass in the tub 90 degrees, after the curd has been coarsely broken by the hand to allow the warm whey to mix with it. At this stage of the process, wait five to ten minutes, then commence dipping off the whey, and get the curd pretty dry as soon as possible—take it out in handfuls and put it in a strainer and vat, and put it under a screw-press for about fifteen minutes, pressing very gently at first, but with considerable force before the expiration of the fifteen minutes, when it should be taken out and broken up till there are no pieces of curd larger than a kernel of corn. This should be done as quickly as possible, and in a warm place if the day is cool; if this is not attended to, the particles of curd may not unite well, and the cheese might be unsound.

While the curd is in the fine state, a portion of salt, to the taste of the maker or his customers, may be added and mixed well with it; or the salting may be done after the cheese is finished pressing, by keeping it twenty-four hours or longer in a tub, rubbing it frequently with salt, and turning it over, taking care to pour off the brine daily. We have practised both these methods of salting with success (our cheeses are about 12 lbs.), but I prefer

the latter method, though the first mentioned does not give one-tenth of the trouble. Gentle pressure only should be applied when the cheese is first put to press, and here I think the advantage of the screw-press is apparent. With it, a pressure of from 1 to 1,000 lbs., as the state of the cheese may require, in an hour or two, or when the cheese

has pretty much done dropping, turn it and put it in a dry cloth, and repeat this once or twice, or more if you choose, before the expiration of twenty-four hours, when the cheese may be taken out of the press wholly to make room for its successor.

A SUBSCRIBER.

Auburn, February, 1846.

IMPROVED EAGLE COTTON GIN.

Description.—*a*, driving brush pulley; *b*, slide; *c*, *c*, end boards; *d*, cylinder pulley; *e*, top board; *f*, saws; *g*, grate fall; *h*, seed board, with a section of the patent grate below it; *i*, idler pulley.

After carefully unpacking the different parts of the Gin, put the front pieces into the posts and fasten them securely with the joint-bolts.

The Saw Cylinder should be first placed in the frame, then the piece having the false grates upon it, and then the brush. The top timbers may then be put on and fastened. See that all parts of the frame are square. The grate fall should then be hung in its place, and the top boards and slides fitted in, so that the marks on their ends will correspond with those on the timbers. Then adjust the saw cylinder and false grates with the tempering screws at the ends, so that the saws and grates will exactly correspond, taking care not to turn the screws any farther than is sufficient to keep them steady and in their places.

See that all joints of the frame are screwed up tight—place the Gin in the position in which it is to stand, and fasten it securely to the floor or platform, so that it will stand perfectly level. See that the shafts turn freely on their axes, and that the saws run freely in the centre of the spaces between the grates.

The oil cups at the axes of the shafts should be nearly filled with oil when the Gin is started, and the wick which conveys the oil to the axes should be enlarged or diminished, until the proper quantity is supplied to prevent friction. The tube containing the wick should be withdrawn when the Gin is stopped, and dropped into the cup to prevent wasting the oil, and replaced when the Gin is again put in operation.

The saw cylinder and the piece having the false grates upon it, may be moved endwise and adjusted by the screws at their ends.

Place the mote-board 3 to 5 inches below the brush, slanting down toward the front part of the Gin, and extend another board from beneath it down to the floor; it must then be moved either forward or back, and the slant of it varied until the motes and false seeds are separated from the seed cotton and fall under the saw cylinder.

The seed-board may be raised or lowered by means of the small bolts on which it rests at the ends, and it may be varied so as to enlarge or diminish the space containing the seed cotton.

A 10 inch saw cylinder should run about 180 revolutions per minute. A 12 inch do. should run about 160 do. A 13 inch do. should run about 150 do.

Great care should be taken to fix the mote-board

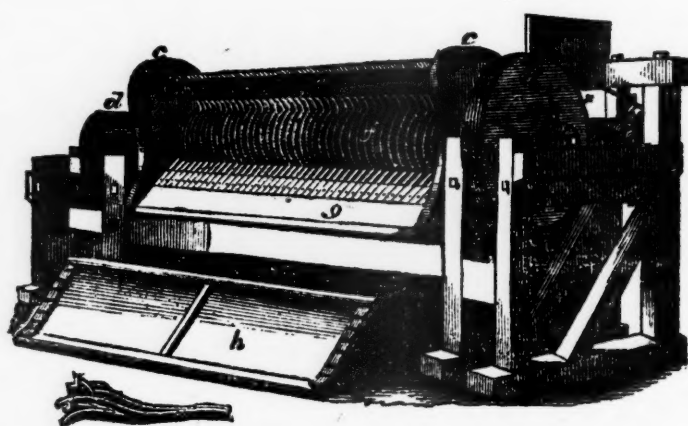


FIG. 43

in a proper position to separate the motes from the clean cotton, as well as to adjust the seed-board, so that the seeds will be discharged as fast as ginned; and it is essential that the speed of the brush should be very rapid, and that all the axes should be kept oiled and prevented from heating.

Price of Hand Gins, with 14 to 18 saws each, \$50 00 to \$60 00. Power Gins, with 30 to 100 saws each, \$3 40 to \$3 70 per saw.

BENEFIT OF GUANO.

As it may be for the public utility to hear something on the score of Peruvian guano, I will give you my experience on the subject.

Last year I used about three and a half tons of it in various ways, during the spring and summer, and must say I think it the cheapest and most effective manure I have ever tried, particularly as a top-dressing for grass lands. The way I prepare the guano for use is this: I plow a knoll of loamy soil, remove all the sods to the barn-yard, harrow the ground to make it fine, then spread a layer of guano half an inch thick, then shovel on fine dirt five inches thick, then a layer of guano as before, then five inches of dirt again in alternate layers, till I get the quantity desired. This must lie a week or ten days in compost, to incorporate the guano with the soil; it must then be shovelled over, and all the lumps broken and well mixed; you can then put it in your cart and spread it from the tail of the cart about as thick as you would ashes. I put on at the rate of 500 lbs. Peruvian guano to an acre, which started my grass right ahead, yielding two tons per acre, where I should not have had over 500 lbs. of hay without it.

My potatoes benefited greatly by the use of guano, turning out astonishingly—"the observed of all observers;" and I believe it to be a cure for the potato disease, as we had no rot where guano was applied. Applied to corn I found it equally

beneficial. I planted a lot of pasture land, a poor sandy soil, and mostly grown over to moss. I spread on forty ox-cart loads of stable manure to the acre, and plowed it in; but fearing that would not overcome the inertia of the soil, I applied 500 lbs. guano per acre, in this way, after harrowing, instead of running my rows with a plow. I did it with a small harrow made for the purpose, not over 14 inches wide, but heavy. The guano was then spread in those drills, and then the harrow run again, to mix it well with the soil, and put it in fine tilth for planting. My corn yielded 70 bushels per acre, whereas, some rows that had no guano, gave at the rate of 28 bushels per acre. This, I think, conclusive. I recommend it also for fruit trees.

Seekonk, Mass., Mch. 14, 1846. J. W. BOWERS.

SORTING WOOL.

As most of the sheep of the United States are shorn during this month, we cannot do the farmer a greater service than to call his attention to the subject of the quality of his fleeces, and the manner of stapling them. For the cut illustrating this, and the matter which follows, we are indebted to Mr. Morrell's valuable work, the American Shepherd, recently published by the Messrs. Harper of this city.

Fineness.—This term, when applied to wool, is wholly comparative; various breeds of sheep producing wool essentially different in quality, the same breeds varying much, and all breeds exhibiting qualities of wool of unequal fineness, in the same fleece. It is also sometimes the fact that the extremity of the fibre, as ascertained by the micrometer, is five times greater in bulk than the centre and root.

The fibre may be considered coarse when it is more than the five hundredth part of an inch in diameter, and very fine when it does not exceed the nine hundredth part of an inch, as exhibited occasionally in choice samples of Saxon-Merino wool. It is said there are animals which have a wool underneath a covering of hair, the fibre of which is less than the twelve hundredth part of an inch.

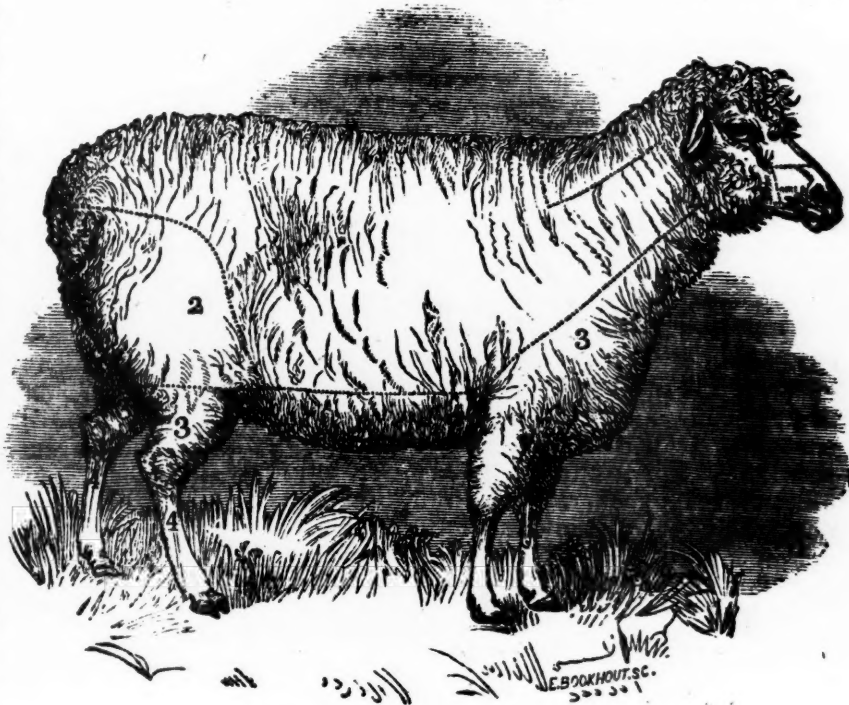
The following cut will show the points in the pure Merino and Saxon where the different qualities of wool are to be found. The divisions do not always accurately correspond, but Lasteyrie and Chancellor Livingston, who were both familiar with pure Spanish Merinos, agree as to their general truth, and the observations of the writer confirm their decision.

It is, then, a matter to be studied by the wool-grower, who is desirous of propagating sheep of the fine-woolled varieties; for grades will often exhibit seven and eight qualities in the same fleece, whereas it will be seen that unalloyed breeds show but four qualities. Individuals have occasionally

been found in original Saxon flocks whose fleeces would divide into only two sorts; but this is very rare.

The *refina*, No. 1, or the picklock wool, begins at the withers, and extends along the back to the setting on of the tail. It reaches only a little way down at the quarters, but, dipping down at the flanks, takes in all the superior part of the chest, and the middle of the side of the neck to the angle of the lower jaw. The *fin*, No. 2, a valuable wool, but not so deeply serrated, or possessing so many curves as the *refina*, occupies the belly, and the quarters and thighs down to the stifle joint. No. 3, or third quality, is found on the head, the throat, the lower part of the neck, and the shoulders, terminating at the elbow; the wool yielded by the legs, and reaching from the stifle to a little below the hock, is procured from the tuft that grows on the forehead and cheeks, from the tail, and from the legs below the hock.

Length of the Staple.—Formerly, wool of short staple only was thought by the manufacturer indispensable to make a fine cloth with a close pile or nap, but the improvements made in machinery within a few years, have superseded this consideration, and now long-staple wool is most valued. This in part proceeds from the fact that short wools



MERINO EWE.—FIG. 44.

have more "dead end," proportionally, than long; again, the new American enterprise, for manufacturing muslin-de-laines, calls for a long, tough, fine staple. The Australian wools, which are of Merino and Saxon blood, from the mildness of the climate of New South Wales, are very much longer in staple than formerly, and are much used for the above object. It is a query, however, whether a fine and very compact fleece, possessing a long fibre, can be produced on the same sheep. Very close, fine fleeces, are always comparatively short in staple; and close fleeces are indispensable in our rigorous climate, to protect the sheep from the effects of cold and wet; on the contrary, open

fleeces are usually long in staple, but a poor defence against a low temperature. It is, therefore, a question for the wool-grower of the North to consider whether, in obliging the manufacturer, he will not adopt a policy injurious to the constitution of his sheep. In a more southern latitude, this consideration is not so important.

LESSONS FROM EXPERIENCE.

As you declare your paper "free and independent," I ask the liberty to state my views respecting the last clause of your article on the "*Potato Rot*," in the December No. of the *Agriculturist*. The clause reads thus: "Our readers will do us a great favor by giving us facts on this interesting subject, free from speculation."

My experience teaches me the entire futility of accumulating facts from ordinary observation on this subject; and that the mariner might, in ascertaining the velocity of his vessel, as well tie a living wild goose to his log-line and throw it overboard. But the reader will say, and truly too, any fool knows better than this. That is true; but in this case there is no danger of mistake. The error occasioned by the accidental attachment of the goose is too manifest to deceive. But one fact, among numerous others which might be mentioned, will suffice to show that causes not obvious have a decided effect in producing, as well as controlling this disease. A friend of mine, whose veracity I am willing to vouch for, relates the following facts: In planting his potatoes the last season, it so happened that he planted certain portions at different times; and in doing this it so happened that a portion of the field was planted after a heavy rain had fallen on the manure after being dropped in the hill. The whole was planted with the same kind of seed, and otherwise treated alike in every other respect—the only difference being this, that one portion of the dung was covered as taken from the heap, and the other exposed to the atmosphere in a drenching rain. The result was, that the potatoes on the portion where the manure was exposed to the atmosphere and the rain were but very little affected by the rot, compared with the portions where the manure was not so exposed.

Now it is a fact, that I could readily accumulate facts from my own experience and others in this vicinity, to fill a small volume; and yet every fact should go to support a different theory; and this assertion is not lightly made.

Again, I wish to enter my protest against your conclusion with regard to the cause of this disease, or perhaps I ought to say your opinion as to what the disease is. You say it is probably a "fungus." My experience, and it is a painful one, teaches me very different from this. I perfectly agree with you as respects the propriety of publishing long prosy articles on the subject; but as to what would constitute such articles, perhaps we differ. Of this I do not complain.

And I ask one more favor of you, and that is to state briefly the result to which my own experience leads me, and of the truth of which I feel not a shadow of doubt. It is caused *generally* by a substance poisonous to the tubers, which poisonous substance is eliminated during the decomposi-

tion of organized matter, nearly or quite in contact with the potato. I have said *generally*, because I believe any cause that kills the life of the potato may produce the same result. By the life of the potato I do not mean that kind of life that causes its growth, but that which resists decay. Hence, then, we see potato vines killed before the tubers are half grown, and yet the tubers do not rot. And farther, experience teaches me that this poison is almost universally eliminated early in the season, and dissipated or weakened by the powers of the soil too much to affect the tubers, so far as to destroy that kind of life in the potato of which I am treating. For ordinary seasons, then, this disease cannot take the form of rot. But in seasons like the last two, when it is very cold the first part, and the last is warm, this peculiar development of the decomposing geine takes place with great rapidity, and furnishes the poison with uncommon strength. My experience teaches me that heavy rains may dissipate this poison, and prevent its effects in some instances. My experience also teaches me that if the rains be just enough to wet the ground around the tubers, the plants being dry will drink in the poison greedily, and thus produce more disastrous effects than dry weather. You may see the same effects produced in grain plants, and far more *commonly*, because the plants mature when in common seasons the poison is strongest. My experience teaches me that numerous causes of different soils, seasons, &c., control the development of this poison, and that it requires the most elaborate and the most exact experiments to arrive at any definite results.

My experience also teaches me that this disease is not that "new thing under the sun" which people seem generally to believe it. Every potato which when boiled gives a fœtid smell, is infected with this disease; and these we find every year. They are poisoned, but the poison is not strong enough to kill them.

JOSEPH H. JENNE.

Peru, Me., March, 1846.

As our correspondent proposes a continuation of this subject, we will wait till he gets through before making any comments. He is at least a shrewd and curious observer, and we shall be pleased to have all the facts of the case within his knowledge. Much valuable information is now being prepared for publication by scientific men, appointed by several of the European governments, to investigate the disease, among numerous districts of farmers.

WATER FOR CALVES.—Accident, last year, taught me that calves whose only food is milk, still need a supply of water daily. I had supposed they were fully supplied with liquid in their food. But in changing my calves from one lot to another, they passed the water trough, where they drank heartily. I acted on the hint, and supplied them daily afterwards. They drank as often as other cattle, for aught I know, though milk remained their main food. Perhaps everybody else knows this, but I did not, and lest others may not, let me speak a kind word for the calves who cannot speak for themselves.

T.

Ohio, March, 1846,

• OVERSEERS AT THE SOUTH.

On page 24 of your January No., I observe a paragraph about overseers of farms and plantations; and on page 17, Mr. Norton's letter, in which he mentions the Agricultural School of Templemoyle. Sir Robert Ferguson I know personally, and he recommended two young men to me as stewards or overseers from that school, when I resided in Ireland, ten years past; and two better overseers, or more unexceptionable young men I never met with—perfectly competent to do their business. Mr. Jas. Anderson, Sir Robert's agent, and also one of the trustees or managers, is at present sending over at my desire, a young man from there as an overseer for a friend of mine here, Mr. Woodfine. If you want for your friends proper overseers, who know their business, I recommend their getting them from there. The salary mentioned, viz., \$500, is ample for trial. One servant is quite enough to wait on one of them in the house, for they are brought up plainly, and will not be above helping themselves, giving such assistance as is necessary—such as sowing grain, showing the farm servants how to manage horses, plows, &c.; and I venture to say they will raise as much grain off of half the land as is at present done, and keep it clear of weeds and the soil from deteriorating. Indian corn they know nothing of; but a little instruction will put them in the way of raising as large crops as any one can on the same kind of ground. They are well versed in the care and management of cattle of all kinds. If any friend of yours should require an overseer, I will write to Mr. Anderson to do so, if certain of their being employed when they arrive. W. M. MURDOCK.

Ashville, Buncomb Co., N. C., March 27, 1846.

DISEASES OF ANIMALS, WITH REMARKS ON SHEEP HUSBANDRY.—No. 2.

My object in availing myself of the privilege of your periodical, to communicate some facts and incidents in animal medicine and agriculture, is purely the good of the farmer; for I have long been aware of the unjust contempt which the farmer has received from the other classes. I can hardly reconcile the remark of the great English moralist with the general good tenor of his writings and disposition, and of course do not agree with him in his remark upon an admirer of nature, that "that man's conversation savored of bullocks." It might have been the result of aristocratic feelings, produced by royal patronage; but whatever might have been the cause of this state of feeling in England formerly, it has now entirely subsided, and given place to a most laudable encouragement and patronage to all agricultural pursuits (even from the hand of royalty itself), as shown by the absorbing interest now taken in England in this branch, by some of her most eminent statesmen. This commendable zeal to raise the dignity of the husbandman has reached our own land, and may it be cherished by every patriot and philanthropist until our country shall be covered with the results of industry and science.

My object at present is, to mention some of the diseases among sheep and other animals, which have come to my own knowledge from observa-

tion, hoping that it may stimulate others to watch attentively the symptoms of every diseased animal on their farms, and search for the cause of death in every instance. No doubt many will say, "what can I tell of what part is diseased, or what it is?" Why, it is a very easy matter to learn the general structure of an animal. Every man looking at the inside of a beast can easily tell whether the liver, heart, lungs, stomach, and bowels appear healthy or diseased. If diseased, describe it; note it; perhaps others will become diseased in the same way, or have the same or similar symptoms. Examine the stomach, see what has been eaten, and where the animal has been feeding. By observing these things, the diseases of animals and their causes would be as easily ascertained, and consequently be as easily prevented or cured as those in the human subject, indeed much more so; for as the food of animals is more simple and natural, so would their diseases be fewer and more simple, and be more easily and successfully treated.

I have noticed since my residence in the *West*, at times nearly whole flocks of sheep extensively diseased, and the owner, or shepherd, hardly seemed to have any idea what was the nature of the disease, or what the cause; and so for want of a little proper study and reflection, hundreds of these useful animals die annually. As regards sheep husbandry in this section of the country, an important consideration presents itself. To supply the want and demand occasioned by the immense tide of immigration that is constantly rolling to the west, millions of sheep must be brought in. These, like ourselves, who have been raised and accustomed to a healthy climate and soil previous to our arrival here, but poorly bear the change; hence sheep and other animals become subject to new diseases, the result of new causes and new influences. It is in this way that the intelligence has gone forth that sheep will not do well on the western prairies. Now this is a sweeping conclusion, drawn from isolated circumstances; for there is as much difference in the situation of our prairies for health of both man and animal, as between a sea-coast and a lake-shore, and more so.

Many of our large prairies, upon which sheep are kept, are as level as a house floor; and for three or four months in a year are almost inundated with water. Every one informed as to the nature and habits of sheep, knows very well that they cannot long remain healthy in a wet or damp situation; and that they will sooner or later become diseased.

This is but one view of the case. Aside from the disease of moisture, the soil and atmosphere are impregnated with *miasm*, which is almost as deleterious to sheep as to man. Although I have not yet seen a sheep shake with the ague, yet I have seen dogs do so effectually—hence I draw the conclusion from extensive observation, that sheep and all animals, more or less, are frequently diseased with *miasm*, or the poison that exhales from the earth, and the decomposition of animal and vegetable matter. It is a *fact* that is well known in all the Western States, that the diseases of animals change materially from the diseases of old settled countries; both man and animal seem to be affected alike with the climate and different circumstances

to which they are subjected. It was long ago noticed by Professor Drake, of Cincinnati, that hardly a hog was slaughtered at that market that had not a diseased liver. I have noticed it myself during seven years' residence in this section of country. To satisfy my curiosity, when I have had the opportunity in a number of cases of sheep dying from staggers, running of the nose, &c., *I have invariably found their livers to be extensively diseased.* It would be an easy matter to assign the cause of this and other diseases among sheep in the West; but we must be brief. In the first place, we must commence with those sheep that are brought here. One great error in most people is, that they look at lowness of price, instead of looking at quality and condition, and consequently a large portion are *very old and infirm*, the cullings from choice sheep, whose more prudent breeders would not part with. Such sheep cannot stand being driven several hundred miles. They are generally driven west in very hot and dry weather; the dust to which they are continually exposed, and which they inhale, is a constant source of irritation to the lungs and air passages, and completely deranges the whole digestive functions, and sooner or later the whole flock is extensively diseased. Such sheep generally die off the first winter in this country.

Again, sheep, as well as other stock, suffer much, and often die in summer season on the prairies for want of sufficient good water; such has been the case the season past; the drouth has been so great that streams that have usually afforded plenty of water have been entirely dry, and if animals obtained any *water at all it was very bad*, stagnated, and full of filth and *miasm*. I have often seen them sucking every particle of such *water*, when it looked so green and putrid that the very sight of it would excite in me a strong disposition to *nausea*. Dr. C. Stimson brought in a flock of two thousand sheep from parts of Canada and Ohio, during the warm and dry season of the past summer. They appeared to have suffered much from dust, fatigue, and heat. To add to their suffering and mortality, the drouth was so extensive that many died for want of water. I frequently rode by them on the *prairie* where they were kept. The taste that I always have had for sheep-raising, combined with the interest I felt for my friend, caused me to observe them very closely. Once in particular, one half-grown lamb and a sheep were completely prostrated for want of water. The shepherd had taken the lamb all the way in his arms, some three miles, to the stream, hoping to find water, but there was none—a number had already died.

It may be thought by some that I am too minute in the detail of circumstances; but I think a few instances like the above worth more than a volume of theory. If sheep or other animals do not do well here, there are good reasons for it! Many get a quantity, regardless whether they are the kind adapted by constitution, &c., to our climate, and the circumstances of the country, and turn them out to take care of themselves, and if they fail to do well, "*sheep business*," in their estimation, is "*bad business*." No prudent person can reasonably expect to succeed in this way. Sheep

must be taken care of; they must have extraordinary attention, and that continually. They must have a sufficiency of good water, and that of easy access, so that they can drink whenever nature prompts. Many depend on springs and natural streams for water; this will not do; for the springs in this country generally fail nearly every summer; consequently an efficient well of water, with a good pump, should be provided. There is no excuse for not being duly supplied with the best water, for generally through the West it can be found on an average within thirty feet of the surface; and no impediment usually offers to digging. A pump with a little expense can be worked with horse, or even sheep power; or it may be contrived on the wind-mill plan for summer operation, for on our broad expansive prairies a day hardly passes without a fine breeze from some quarter. Narrow troughs or vats may be constructed in the ground, on the plan of a small canal, with hydraulic lime, and made with a little expense to convey water to any distance.

Let it be indelibly impressed on the memory of every one wishing for the health of his flocks, that they never should be allowed to drink at a stagnant stream or puddle. The shepherd must be up early, and his sheep cropping the moist grass, that they may be supplied before the heat of the sun enervates vital energies; and a shady grove with a few sheds should be secured in the feeding range; for during the summer sheep cannot feed with much comfort from nine in the morning to six in the evening; therefore it is highly necessary for the attendant to keep them out until nine or ten o'clock at night. Neither should they be huddled together in a close, dirty yard, so small and ill-ventilated that they are obliged to inhale each other's breath. Again, another great error is not only the keeping of too many together, but of those of different kinds. Ewes and lambs never should be kept with wethers, nor bucks, *except in the proper season*. Many young lambs and weak sheep are teased and fatigued by bucks and wethers until they are completely overcome, and die in consequence. A diseased or affected sheep never should be allowed to remain with the healthy; the flock should be closely watched, and as soon as a diseased one is noticed it should be instantly removed to its appropriate place—the *hospital*.

As the season is fast approaching when many will undoubtedly be preparing to drive sheep, in their way of immigration into this country, one word of advice from one who has long been experienced in sheep husbandry may not only save them many a dollar, but do a service to our western population likewise. Select such sheep as are hardy, of a rugged and sound constitution. They should be from one and a half to four years old, which is the true scale to be confined to in that respect. Old sheep will not only die off after arriving here, but should they be ewes (which kind it is supposed will mostly be brought as breeders), they will not raise their lambs. Sheep younger than one a half years will not stand the fatigue of a long journey without much trouble and care. It will well pay, and be a great saving in the end, to give something more for choice kinds of sheep.

In driving, never feel in a hurry, be at home; and for that purpose fix well before the start, so that comfortable quarters can be had on the road without fretting to push ahead. See well that the sheep have plenty of time to rest and eat, and plenty of good substantial food: for such a purpose have them accustomed before starting to eating threshed oats, which are a nourishing and unstimulating food for the road. Recollect that sheep will naturally be a little feverish on the road, and will require plenty of good water, and that often, and on that account never *over-salt*, for fear they should drink so much as would cause them to scour bad, and thereby become weakened.

ANDREW STONE, M. D.

Lake Court House, Ind., Feb., 1845.

THE POTATO DISEASE.

I SHALL not attempt to account for this disease, but shall give some facts derived from experience, which may go far towards a prevention. Many writers have attempted to explain the cause of the disease; some by supposing it to be insectial, others again say it is caused by a fungus. If a medical man should find insects or proud flesh in or about a wound, would he pronounce the insects or proud flesh to be the cause of the wound, or the effects of diseased action? It must be known, or should be, to all natural philosophers, that when vitality ceases, either in the whole, or in any part of organized matter, it immediately begins to change into other organisms, many of which products bear no resemblance to the original organic product. It follows, of course, that we should be very careful in our investigations not to attribute effects to causes; for, by such a mode of reasoning, we never can find a cure for either animal or vegetable diseases.

In raising potatoes in the part of England I came from, the rocky strata calcareous, we always found the best and soundest product from new land that had received no manure; and never considered they could be of *prime quality* when grown in soils *highly manured*. To obtain choice potatoes for family use, we set men to grub up the bushy districts, and in such soils we never failed in raising a sound and choice product. Limestone soils we always considered more agreeable to the potato crop than soils principally argillaceous. The farms, therefore, on the chalk downs, were celebrated for this esculent. I had an uncle on the Wiltshire downs, at a town called Kennett, whose potatoes were in great repute, and I have seen spots in a field, plowed for potatoes, turn up white chalk to the surface. He fattened his pigs and cattle on steamed potatoes, until two or three weeks before killing he gave them grain to harden the fat. They were washed in a machine, five bushels at a time, and the steamer held about thirty bushels. He once gave to a hog some of the liquor left in the kettle below the steamer, and this liquor nearly killed the animal, bringing all its hair off, and it was more than two months before it fully recovered from its effect.

In confirmation of the advantage of lime in soils, for raising this crop, we had presented last fall to the Brooklyn Natural History Society, three samples of potatoes raised by Mr. Ladanskie, near

Jamaica, Long Island; one portion of the land was manured with stable manure, one portion left without any manure, and a third portion was well limed. Those produced on the limed land were perfectly sound, whilst both the others were generally defective.

I have one more fact to offer which I consider highly important to our farmers. We made an acre of garden on the sea-sand, at Gravesend, Long Island, and in the compost heap we used about thirty per cent. of fine charcoal. It would be useless to describe all the other materials used, as they were numerous, being a collection of everything we could scrape together that could be obtained without cost. Among the numerous articles were the refuse of a whiting manufactory, of about half a sloop load, and twenty-one barrels of the refuse of a soda water manufactory, or pure plaster of Paris. In this garden we planted our winter potatoes the year before last, and they were not only sound, but the most delightfully tasted of the kind we had ever eaten. The last year some of the same kind were planted on a piece of old meadow land, and they were not only unsound, but disagreeable to the taste, and we had to discard them, and buy for family use.

I infer from the above-named facts, that lime unburnt, or burnt, and charcoal, are the best preventives for the disease in potatoes, and for otherwise improving their quality.

Any farmer, in this woody country, has waste limbs of trees sufficient to make one or two thousand bushels of charcoal annually, which he could render sufficiently fine for his purpose, by passing a heavy roller over it on any hard ground. This would be no great labor for an industrious man. Let him, when he plants a potato, put in with it about a quarter of a pint of fine charcoal and ground oyster shell in about equal quantities, and I feel pretty confident that his product will not only be sound, but of very superior quality.

Farmers who cannot obtain charcoal or ground shell, can buy it ready prepared, and mixed in due proportions, from a Mr. Atwater, of New Haven, Connecticut; or it can be obtained in this city. Mr. Atwater has invented a machine for grinding bones, shell, &c., fine enough for all agricultural and horticultural purposes. Such a machine is a great desideratum for bone, as this article, when in lumps, will take many years to decompose; and its beneficial effects be so slowly developed, as to induce the consumer to condemn them as useless. Mr. A. will prepare a mixture of fine charcoal and lime shell, also of charcoal and ground bone. I am pretty certain, from actual experiment, as before mentioned, that charcoal and lime, if planted with the potato, about a gill in each hole, would prevent the rot. I should expect as good or a better result from the charcoal and ground bone, as the bone supplies not only lime but *phosphate*, one of the elements of that esculent. At all events, let some of our farmers try the latter, and report the result; for I cannot speak of it from actual trial, the only real test to be relied on. It will be perceived that one bushel of either of the above mixtures will suffice for two hundred and fifty plants; a cheap and safe manure, producing no weeds.

Charcoal should always be used with bone ma-

nure, or more than two-thirds of its fertilizing virtue will be lost to the farmer. For, as bone decomposes, it gives out a large quantity of ammonia, an alkali so volatile as to be lost by evaporation, unless combined with some material that will retain it, and charcoal will hold of this gas four hundred times its own bulk, giving it out to the plant as required.

I would suggest to our farmers the folly of planting potatoes in any soil in which water cannot freely percolate, as stagnant water will inevitably ruin the product.

WM. PARTRIDGE.

New York, April, 1846.

AGRICULTURE IN NORTH CAROLINA.

I PROMISED to furnish your paper with an article treating of the system of agriculture pursued in the eastern section of North Carolina generally; and you have been pleased to ask me for one in relation to my own method of farming, particularly. Had I not *promised* to furnish something on the subject, I would now shrink from the task; for I know full well that I cannot impart any instruction or valuable information in the description I should give of agriculture as it *exists* at present in our section of the country. I use the term *exists* in a passive sense, and in contradistinction to that in which I would use it were I residing in a country whose agriculture was in a flourishing or even progressive condition. But I grieve to say, that here, with some very few exceptions, our farmers are content to plod along the same slipshod, slovenly, wasteful course of impoverishing their lands, and themselves, which reduced those who formerly owned the lands either to beggary or emigration. So universal has been the bad management in the eastern section of North Carolina (and I may with truth include the same sections in Virginia, South Carolina, and Georgia) on the part of planters, that an estate is now seldom owned by two generations of the same name or family. Nor is this the least melancholy reflection arising from a view of this picture; for with the extinction of ownership to the land by children of its former proprietor, there soon follows the extinction of his family or name; poverty, death, or emigration, to distant lands; in a few years effacing well-nigh from the memory of those who are left behind, that such persons ever dwelt in their neighborhood. You will naturally ask, is there not some special cause at work to produce such melancholy results, and if so, is there not a remedy to check its further progress?

My own decided belief is, that the primary cause is attributable to the gross ignorance and neglect of those to whom the proprietors have hitherto confided the management of their estates. I mean our overseers or managers; and that our remedy consists in an entire remodelling of the old system. This you will readily understand when I state the following case, as a fair sample of the management of a Southern plantation. Mr. A. becomes possessed of a tract of very fair land, say 1,250 acres, valued at \$15,000, of which from 800 to 900 acres are cleared; he also owns some 25 working hands (old and young inclusive), which, with his stock, farming tools, &c., &c., cost him some \$15,000 more. Here, then, is a capital of some \$30,000, invested in a plantation, as it is termed. What is

the first thing that he does? Why, to hire an overseer, that is, a white man to live on his plantation, manage his negroes, and "make a crop." Whom does he select for such a purpose? Why, generally speaking, some young man in the neighborhood, who is too indolent himself to work for a support, but is ready to make others work for it—perfectly and thoroughly ignorant of everything relating to agriculture, or anything else, with the exception that he has occasionally taken hold of a thing called a plow, drawn by one horse, and which he skims over the surface of the ground, or mayhap scratches it to the depth of one or two inches—has probably dropped corn here and there, over this surface, and covered it sometimes with a clod and sometimes not at all; and then afterwards gone through his corn rows or whatever they may be, three or four times each with the plow and hoe—and this he calls planting and "tending the crop." He may have "farmed" it this way in an effort to "raise" corn, wheat, cotton, tobacco, &c., either on his own account or that of one of his neighbors, who were short-handed, and hired him for the purpose at different periods of the youth's "growing up." He probably may have been to school long enough to have learned how to read, and, with prodigious effort, to write, and go through a simple sum of addition, multiplication, and subtraction; but even *without* these accomplishments he considers *himself* properly qualified to manage your farm, or, as it is called, "carry on your business." He receives, as a salary, from \$150 to \$350 per annum; his provisions are found him by his employer, that is, a sufficiency of pork, or bacon and meal, the use of a cow, a horse to ride over the plantation, a house to live in, and a woman to cook and wash for him, &c. Generally speaking, therefore, excepting a small deduction for their clothes, they spend very little of their salary.

Now it is scarcely worth my while to say anything in relation to the system of farming carried on under such auspices! Would not any mercantile establishment in New York or London, however vast its resources, soon explode, if the management of its affairs were entrusted to one so little versed in his business, as this overseer palpably must be in that which he presides over? Can any one wonder now at the picture I have presented, when the first object the eye rests upon is this odious deformity? Should you desire it I will finish the landscape at a subsequent period. Excuse this hastily written scrawl—the truth is I take no pleasure in the recital.

T. POLLOK BURGYN.

Ravenswood, N. C.

TO DESTROY THE BEE MOTH.—A correspondent from Winchester, Ohio, asks as to the best method of destroying the bee moth. There are various articles on this subject in the back volumes of the *Agriculturist*; but if any of our readers can furnish us additional succinct information on the prevention of the moth, we shall be glad to hear from them—as *prevention* is the great desideratum. There are various authors on the Bee, such as Bevan, Townley, &c., whose works may be had from 25 to 50 cents each. These all treat fully of the bee moth, and it would be scarcely fair for us to copy much from these authors.

A REVIEW OF THE MARCH NO. OF THE AGRICULTURIST.

MANY writers in different agricultural papers have occasionally attempted the task of reviewers; but few have succeeded, except that excellent "Commentator," the late Hon. James M. Garnett, of Virginia. I do not expect to equal him; yet in the hopes of doing good when he can do no more, I am disposed to make one attempt.

The March number, 1846, of the *American Agriculturist* is before me. Do the readers of this paper ever think how much there is in this name to be proud of? How much more than all the records of heraldry, should we feel proud of this name; and how our children should be taught to feel that they never can enjoy a more worthy and honorable name than that of an *American Agriculturist*? No other of all the "Farmers," "Planters," "Cultivators," and numerous names of our growing family of Agricultural papers, conveys to my mind such an extended meaning as does the name of this paper. It is a name that all the agriculturists of our loved country should be proud of—may this paper be so conducted that we shall also be proud of it. Let us proceed now to review it, and if we find faults, and comment upon them, recollect such is the task of a reviewer.

Vignette.—Before looking at the matter, let us dwell a moment over the *vignette*. It is a picture of such a home as every American Agriculturist ought to enjoy. It is a lovely view in harvest time. Yet the plow continues to run. It might be said by some that so productive a farm should have larger barns, if not so tasty, so as that there should be no necessity of "stacking out." I doubt this. See Vol. 1, page 335, of the *Agriculturist* for illustrations, and an admirable article upon stacking. I doubt the economy of building barns to house grain. It will keep better in stacks if well put up on such foundations as are laid for stack bottoms in England, on stone or cast iron pillars. But the threshing-floor should be in the barn, or what would be much better, a building built solely for a threshing-floor, around which the stacks could be built. Grain can be stacked more green than it can be housed. . . . That distant windmill reminds me of a motive power very applicable to the prairie of the West, but very much neglected. . . . The cattle and horses in the *American park* are no scrubs. But their breeding tells a tale that should teach us the folly of further importation of stock into a country so capable as this is of raising our own from those we now have, and as fine as can be done in England, if we try—we now have the seed—the blood. . . . Those geese in the view may be very picturesque, but deliver me from the filthy brutes around the house and yards. Besides, I am no advocate of feather-beds. Hair, wool, cotton, moss, shucks or husks of corn, or even straw, are far better and healthier, in my opinion, than feathers. And certainly cheaper. Nothing but habit could ever enable a field-laborer to endure the enervating influence of a feather-bed in August.

The Motto.—Next comes a motto from the pen of an American nobleman. It always makes our blood tingle to read it, and we are proud to rank

ourselves in a class headed by the name of George Washington—the father of American Agriculturists.

The Place of Publication.—This is worthy of a passing note. As New York has become the great centre of commercial transactions, so it is for many reasons the most fit place for concentrating useful information; and certainly it possesses more facilities for an editor to make up a paper worthy the name of this one—national in its character—than any other point in the United States; and like the city, the paper should continue so purely the *national paper* of the *American Agriculturist* as to be without a rival.

To Agricultural Societies.—After this long preface, we at length reach the first article. A most liberal offer on the part of the editor and very gentlemanly publishers of this paper. Fifty cents only a year! Who could believe it, for such a useful, entertaining, and handsomely illustrated periodical? I hope many societies throughout the Union will avail themselves of your generous offer. Let me recommend them in all cases to take the bound volumes. They are beautifully bound in black cloth, and gold lettered, and only 75 cents to members of Agricultural Societies. Why, it is the very *cheapest* work ever issued from the press. Another suggestion. Let the publishers have a certificate printed to bind or paste in each volume, intended as a prize, something in this form—"This volume is awarded to A. B., of Brooklyn, by the Kings County Agricultural Society, as a premium and certificate that he exhibited the third best milch cow, at the show held at Flatbush, for the year 1846," &c., &c. . . . Speaking of lectures reminds me, that agricultural societies could not make a better appropriation of money than devoting a small annual sum to pay the expense of lectures. You can get men to *hear* who cannot or will not *read*. And you must get them to read or hear before they will think. If a man does not think, how can he act and improve? How else can their minds be "opened to conviction," so that they can see "what is for their best interests?"

Early Plowing.—Good advice, which being interpreted, means, do all your plowing in the fall; and do it well and deep, with a *good* plow, and not with that old rattle-trap which you have been plowing with for five years past. Is it possible that any man in possession of sense enough to read your paper, Mr. Editor, needs to be told that it is very poor economy to work his team, or land, or self, or hands, in rainy weather? If he is a good farmer, he will always have "a job for a rainy day" kept in reserve. . . . For spring grain upon "a stiff clay," I had rather have one acre fall-plowed, than two acres "mud-hauled" over in the spring. And generally speaking, the one acre will produce the most wheat or oats, and it does not cost so much to plow two acres in the fall as one in the spring. This difference, a merchant would think was a tolerably fair profit.

Parsnips.—This article is not like the almanacs, that are calculated to suit all parts of the United States. It would hardly suit the meridian of the Miami or Wabash Valleys, to quit corn and take to parsnips. However valuable the root crop

may be in some of the Eastern States, I could never recommend farmers to try it for feeding stock, where they raise corn for ten or twelve cents a bushel, as is the case upon millions of acres west of the Alleghenies. Where roots must be grown, I have no doubt that parsnips would be found a valuable crop. But the soil must be very rich, and very deep and mellow. For a field crop, one of my neighbor Ruggles & Co.'s biggest subsoil plows should be used. . . . There is one more valuable property of this root which you have not mentioned. A field of them is worth all the recipes in creation to keep the rabbits away from the young fruit trees. Let them have plenty of parsnips to eat, and *they won't gnaw the trees.* . . . Has any one ever attempted to make sugar from parsnips? They certainly contain much saccharine matter, and in that consists their great fattening qualities. With the "potato cholera" spreading through the country to an alarming extent, it is full time for us to look for a substitute, both for man and beast. For the latter it may be found in the parsnip, probably better than either of the other esculents. If we could at the North adopt that universal dish of the South, it would suit our money-saving propensities to eat hommony, while Irish potatoes (what a bull to call them Irish) were selling at a dollar a bushel. But habit and fashion are both tyrants. But let us quit the field, and go to—

The Stable, No. 8.—The first thing that catches the attention of nearly all readers of taste is, the picture. Pray, Mr. Editor, what is that bird-cage looking thing, up in one corner of the stall, high over the trough? Is it intended to put hay in? If so, it is well called "*a rack*," defined in my dictionary as "*an engine of torture.*" . . . If your horse is a very bad kicker, and can kick high enough to reach that "engine of torture," for mercy's sake turn him around and let him expend his "excess of nervous energy," till he kicks that abomination of the horse stable out of fashion. . . . Whenever I discover that it is natural for a horse while feeding in the pasture, to constantly stretch his neck giraffe-like, into the top of the trees to look for grass, then, and not till then, will I insist that my noble friend shall pursue the same course in the stable. Until then he shall be allowed the privilege of stretching his neck *down* instead of *up* for his hay. . . . There is one other method to prevent kicking. It is the Indian mode; and can be adopted in situations where there are none of the appliances of the stall which you describe—that is, on the road, or in the camp, where the malicious kicker will often injure his fellows. This method is the hobble, or fetters. They need not be so short as to impede the movement of the horse around his feed; but if he attempt to kick, he finds there is a limit to his heels, and he will soon desist, and perhaps be cured in time of the habit. . . . Your recommendation "to shoe all kickers with flat shoes, without corks," is calculated for a "Southern latitude." And, generally, there they are not shod at all. In fact, all the recommendations of the article are better suited to the operations of a large stable than to the wants of "American Agriculturists."

Alpacas.—This is a Peruvian product, which I certainly shall not object to see imported in any quantity; and I have not the least doubt but the contemplated importation will prove one of the most valuable for this country that ever took place; and I most sincerely hope it will turn out as profitable as it is honorable to the gentlemen engaged in the enterprise. I should like to be personally engaged in the voyage, where I could see and note the habits of the animals upon their own native hills. . . . But let me inquire, is it the best route to bring them around Cape Horn? Cannot they be shipped to Panama, in smaller and cheaper vessels, with much less fitting for the boisterous passage of the Cape? From Panama to Porto Bello it is 60 miles; and formerly there used to be an immense trade carried on between the two cities, and I suppose there is still a passable mule road across the mountains, over which the Alpacas could be driven, and at Porto Bello take a first class vessel, and short run to New York. As this would so greatly shorten the passage, which is usually the greatest difficulty with animals on ship-board, and if feasible would also be less expensive, it is perhaps worthy of consideration. I feel very anxious that the first experiment should be successful, and that it will prove that these valuable animals can be introduced into this country at a moderate price, and thereupon thousands will follow; and I fully believe that they will be found among the most valuable of our domestic animals. I love them, too, because they are Americans.

American Agricultural Association.—"What's in a name?" Why, much in this to make us hope that it is not like that whilom got up at Washington city, a mere "sounding brass and tinkling cymbal." Verily nothing so good as a "National Agricultural Society" could flourish in so sterile a soil as that of Washington. I hope the "American Agricultural Association" will grow, if nothing else, at least a cargo of Alpacas. REVIEWER.

We think the above review in part of our March No. a racy and agreeable article, and we regret that it came to hand so late that we cannot give the whole of it. Reviewer promises, if our readers like him, to continue the subject. Will they let him hear from them anent this matter? He is welcome to criticise any articles which we write to his heart's content—we promise, for one, to take no exception to them. Our readers will understand that the matter interpolated in brackets is ours.

TO KEEP MEAT FRESH IN SUMMER.—A cheap and simple refrigerator, for keeping perishable articles sweet during hot weather, may be thus constructed. Take plank (*hemlock* is best to resist rats), plane one side, and form a hollow trunk about 30 inches in diameter, open at the ends, and as long as your ice-house is deep. Place it erect in the centre of the ice-house, and fill in the ice around the hollow trunk. Into this ice-well meat may be let down by cords and hooks. Or, what is a better plan, a box may be suspended from a little windlass fixed to revolve at the top, and meats, butter, &c., securely kept; and, if desired, they may be lowered deep enough to freeze them. Q. E. D

Ladies' Department.

TO THE GIRLS.

For a long time I have wished to have some communication with my young friends, the country girls, and bespeak their aid in the protection of our mutual pets, the birds, that are inviting our attention and kindness by their sweet songs, and gentle and coquettish ways. They flock around our dwellings, and, if properly invited and noticed, accept our hospitality and repay us a thousand fold for all that we bestow upon them. When we take the trouble to provide a few houses for them, how readily are they taken possession of, and how fiercely guarded, should an intruder dare to rob them of their home; showing how dear to them is their possession, and giving us the assurance that nothing is required but shelter and protection to have flocks around us, and they sufficiently tame to be our household friends and companions. But especial care should then be taken to guard against the thousand dangers that beset them in the shape of boys and cats, their mortal enemies; and worse than useless will have been all our trouble, if these deadly foes are suffered to molest them. In addition to all you already feel on the subject, I will offer a few extracts from the invaluable journal of the Old Lady, which, for some time, has been my constant study. The following notes were taken in June; but I offer them to you now, that you may be in time to prepare the houses, get rid of the cats, and persuade the boys by kind entreaty and gentle remonstrance to suspend their hostility, for their own interest as well as your gratification.

June 12th.—This day has been one of peculiar interest. As usual I rose at 4 o'clock, and while standing at my window to watch the gradual advance of day, and inhale the fragrant air, and listen to the rich melody that poured from every bush, like hymns of praise from the good spirits that had protected us during the night, my attention was attracted to a tree close by my window, where a little song sparrow had built her nest. The male bird was seated on a far-off branch, singing his sweet and merry strains over and over again, as if in love with his own melody, while the mother-bird was attending to her duties in the nest; presently she flew to have some communication with her mate, when his song ceased, and off they went in different directions, but in a few minutes one of them returned with a worm which he gave to the rest, and instantly departed; after a short interval the other came in, and like her mate lost no time. The serious business of the day appeared to have set in, and not a moment was to be lost; so I took the hint and went about my morning task, but determined to take my sewing as soon as possible with my seat close to the window, and make myself more intimately acquainted with the family arrangements of my sweet neighbors. They had for a long time been so familiar with my appearance, that they took no other heed of me than a bright cheerful chirrup as they rested for a moment on a branch close by, and then off to their task again. At 8 o'clock, A. M., I began to note down their arrival, by making a stroke with a pencil each time they entered the nest, and never quitted the window

until 8 in the evening, when the birds went to roost for the night—the mother on the nest, the father on a branch close by. On counting the pencil strokes, I find, to my amazement, that they averaged a worm every three minutes during this long day; for I took care to be certain that they were as diligent before I took my seat by them as they were afterwards. The day has been sixteen hours long, my pets have consequently destroyed 320 worms in one day! In one week this single family will have killed 2,240, and in one month nearly 10,000, unless some cat should discover the nest. Surely I need have no further anxiety about my grape vine, whose wormy appearance troubled me so yesterday, when I found the worms so far out of my reach, and the boys too busy to attend to it. I will trust to my little sparrows, and take care that nothing shall molest them.

13th.—To-day I have spent both painfully and pleasantly in the garden, looking after my fruit, flowers, and birds. The fruit I find sadly injured by the insects, and must be closely watched, and all that is infested by the worm carefully gathered and destroyed, or I shall have little or none next year. Some fine flowers and rare strawberries are killed by the cut worm, whose history I must inquire into; and, saddest of all, I find that fifteen birds' nests have been destroyed by the cats, since last I counted them. At any time this would have grieved me, but, since yesterday's investigation, I feel that it is a loss too serious to be borne with impunity; for, if one family of birds requires 2,240 worms in one week, fifteen families would take 33,600! Had my birds' nests remained, would my fruit and flowers have suffered as they have done? Alas, no! and all this from my ungrateful cats—so the cats, petted and beloved as they have been, must die, all but Tabby, who shall be taught better things if possible. I will try what can be done.

In another part of the Journal I find this memorandum: I am now satisfied that I have been able to teach Tabby the laws of kindness and forbearance, for she has been in the bird cage to eat the bread and milk, while the bird remained unmolested on the perch; the doves, squirrel, and cat, shared their meal out of the same dish, and at night my little white rabbit shared her box with pussy. This has been brought about by caressing pussy while I fed and handled the other pets, and by showing displeasure without severity when she attempted to injure them.

Now, my dear girls, can any of you read this extract and not feel grateful, not only to the Old Lady, but the sweet birds who are rendering you so much service whether you do anything for them or not? A little study of their history will teach you their immense value on the farm as well as in the garden, and you will feel that if you successfully protect and cultivate them, you will be of more real service to your country than many a general whose name is written in history. The wrens, sparrows, blue birds and swallows, you will find most willing to accept your hospitality; but most of all the sparrow, who soon learns that she may not only hop into the room, but share the crumbs on the tea-table.

I had a little family so tame that they gratified me by sharing my meal whenever I left the door open, and invited them by throwing a few crumbs

o attract their attention. The wrens and sparrows vie with each other in the destruction of worms and other insects, while the blue bird will eat more weed seeds in a day than, if suffered to grow, a gardener could pull up in a week. The swallow makes war upon flies of all kinds, and will be found most useful in ridding us of the common house fly (*Musca domestica*), those nasty pests that destroy our cleanliness and comfort during the summer months. The natural food of the larva or young of the house fly is horse manure, in which the eggs are deposited early in the spring. The maggot soon hatches out, and feeds voraciously for a few weeks, when they pass into the chrysalis state, and in a few days swarm out in countless numbers to feast on our greatest delicacies, and become our household pests. Swallow boxes should therefore be on every stable in the country, and the chimney birds never molested, though they do make a sad dirt on our nicely painted hearths, unless we are careful to put a board up to catch the litter.

The cat-birds will be our familiar friends, if the boys will only be persuaded not to throw stones at them or rob their nests; and, as they live a great many years, the same bird will return and build in the same bush while she feels you are kind to her. The foolish story that cat-birds bring snakes, arises from the fact that snakes are fond of cat-birds' eggs, which they are constantly on the look out for; therefore, when a boy hears the screaming of a cat-bird, he may be sure she is in distress, and, instead of killing the poor bird, had better look for the snake and kill that, which will be a real service; as all the cat-birds which can be persuaded to live with us are wanted to eat the cut worms, vine worms, and other insects which do our gardens and farms so much injury. If they do eat a few ripe cherries now and then, surely we may well afford to spare a little fruit in consideration of the good they do us—besides, if it were only for their sweet song, I would be willing to share my ripest cherries with them. My cat-bird is so tame that one day I found her in the kitchen quietly feeding on a loaf of bread. She has her nest in a grape vine under my window, and comes to be fed when I call her.

There are a few directions I wish to be observed in putting up the bird boxes—those for the wrens should have very small holes, or the blue and cat-birds will be apt to get in and tear up the nests; while those for the blue birds should be at a respectful distance from the wrens, perhaps on the other side of the house, or they will watch their opportunity and return the compliment, as they have a great dislike to each other. The wren boxes should not be very close, and if possible out of sight of each other, as they object to too many near neighbors; but you may place them as near your own window as you wish, and provided you do not trouble the young the day they leave the nest, they will care little about you.

TO PREVENT BRASS VESSELS FROM CONTRACTING VERDIGRIS, AFTER BEING USED.—Instead of wiping them dry, it has been found, that by constantly immersing them in water, they are kept perfectly innocuous, and will remain for years fully as clean and nearly as bright as when they first came out of the hands of the workmen.

KNITTING.

THOUGH at present, Mr. Editor, a lonely and comfortless old bachelor, I still live in hopes one of these days of getting married; and if I do, I trust it will be to a woman *who is a great knitter*. Of all the many accomplishments which adorn the gentler sex, I do assure them, from the *very bottom* of my heart, that I esteem knitting among the greatest.

This subject has been forcibly brought to my mind by the reception, a moment ago, of a pair of the most comfortable kind of woollen socks, from a good old aunt of mine, *funous for knitting*. The yarn is of the very best kind, hard twisted, and the stitches drawn so tight on the needles during the progress of the work, that the socks are as compact as a piece of buckskin; and then the heels are so substantially run, that although famous for kicking half a dozen holes per day through such hose as I purchase at the stores, I am sure these will wear me weeks without needing to be touched by the darning needle of my complaining washer-woman. I must confess, Mr. Editor, I was so overjoyed at the sight of these socks, that the tears absolutely came into my eyes on beholding them; and I could not resist the pleasure of immediately trying them on, and when on, they felt so comfortable that they at once revived all my youthful feelings, and before I was aware of it, I began incontinently taking the almost forgotten steps of the double-shuffle, greatly to the annoyance of my sedate landlady in the lower story of the house. Ah, yes! commend me to a knitter—that is comfortable.

When I get married, I intend my wife, with knitting needles in hand, shall be seated in her easy chair by my side, every evening that she is not otherwise engaged; I will then take up some book for her edification, and read aloud. Thus work and instruction will go hand in hand. Ah, how the anticipation of the thing delights me! Would that I were to be married to an accomplished knitter to-morrow!

The German ladies carry their knitting-work to all places of amusement, whether public or private, and why should not ours do the same? In a time of great pecuniary national trouble, an eminent writer on political economy made the calculation, that if our women would knit as much *stocking* yarn as they foolishly misspend in *street* yarn, the national and private debt of the United States would be paid off within a twelvemonth. How true this may be I cannot say, as I care little for political economy—but much, very much for knitting. I hope the ladies will not think me enthusiastic, as it is in their behalf I am pleading; for I verily know that knitting is not only a highly useful, but a most agreeable occupation. Else why should some of our ladies have recently carried their knitting-work to the Senate chamber, to pass the whole day, to listen to the burning eloquence of Mr. Webster; and why else do we find them knitting on board steamboats, and canal boats, on railroads, and even in stage-coaches, except as an amusement to pass away the heavy time. Commend me, then, to a knitting wife—a gentle being whom I hope it will yet be my happiness to possess!

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Boys' Department.

RUMPLESS FOWL.

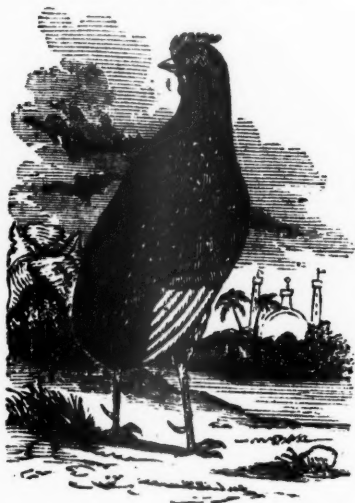


FIG. 45.

THIS bird derives its name in consequence of wanting feathers in its tail, and should therefore be denominated a *tailless* rather than a *rumpless* fowl. However odd it may be in appearance, we know from experience that it is an excellent breed of fowls, having kept them for years. We found them hardy, good layers and nurses. They are of medium size and of various colors, though the golden brown speckled predominate. It is destitute of the gland on the rump, which we believe is found in every other variety of the domestic fowl. A tail is as useless an appendage on fowls as horns are on cattle, and if the boys wish to cultivate a profitable breed of fowls there is nothing equal to the humble rumpless.

SPRING WORK.

Now, boys, is the time for active work. This is just as important in its place as are the schools and studies of winter. Not that I would have you neglect your books altogether, even though you cannot attend school. By no means; you must give many leisure hours to study and reading during the summer. But with most of the boys who read the *Agriculturist*, this is the season when labor takes the lead, as study does during the cold winter months. You have had a fine time for the latter; now, for the former. You need to begin *right* here as in everything else.

"Everything in its season." You have often heard that if a man loses an hour in the morning, he may toil hard all day and cannot overtake it. So it is with the year. This is the time for fitting the ground and planting the seeds. Now is just the best time for doing this. It is early in the spring, just when the trees and the plants all about you are putting forth their leaves and flowers. This is nature's time. If this be passed in idleness, you will get no good crops this year. Just as when youth is passed in idleness and vice, it can never be recovered in after life.

Now, then, for a few weeks, is the season. Everything for the year depends on it. If you would see the flowers of summer and the golden

fruit of autumn, be active now in putting your grounds in the best state, and in planting in the best possible manner such seeds as will give you those flowers and fruits. And after they are planted, don't let a weed grow in all the grounds. Remember, that it costs just as much strength of land to grow a weed as it does a useful plant; and that the weeds are great robbers of the plants. Begin now, and keep on, and your hearts will be gladdened by and by with the reward of your labor.

"Everything in its place." This is another important lesson for you to learn. I suppose you have your little axes and hoes, and rakes, and other tools, suitable for boys, as I recommended you last year. If not, you will have your father get them at once. And then you are to see that everything is kept in the very best order, and is always put in its place. An axe left out in the rain to rust, or a hoe left in the ground over night, is a very slovenly and wasteful practice. On no account should you ever suffer it. No work is ever finished, not even for the day, till all the tools employed are put in their proper place. You will find, as you grow older, that it costs less time to put everything in the tool place at night, than it does to find it in the morning, or to wear off the rust from such as can rust, if you remember where you left them. Lately, I hired a man, and set him to making a ditch. He took my mattock, spade, and shovel, and when he finished the work, left them all on the ground where he last used them. Of course I dismissed him at once, for my tools were covered with snow that night, and much injured before they were found. Here he lost some days, and I sustained considerable damage by his not having learned when a boy, to put "everything in its place."

"Everything well done." "Whatever is worth doing at all, is worth doing well," was the motto of a man who performed a most incredible amount of labor, and was one of the greatest men of his age. And it is precisely the doing things well, or the botching them up anyhow for the present, because they are in a hurry, that makes some men rich and respected, and others poor and despised. The former always have time at their command. The latter are always in a hurry, and always losing from the effects of their poorly done work. The former have good fences, good buildings, good fields, good everything. The latter have poor fences, unruly cattle, leaky barns, damaged crops, poor everything. The former always have "good luck." The latter are always fretting at their "ill luck," in part their own shiftlessness. Learn to do everything well.

But I must stop right here.

T.

Ohio, April, 1846.

EXPERIMENTS.—Well, boys, what do you propose doing the coming summer? Can any of you tell? Will you let the season pass *negatively* away? or will you make some experiments in gardening or farming with a view of testing certain principles? For example: do any of you expect a favorite calf? If so, will you weigh it when first dropped from the cow; then learn it to drink milk from the pail, and weigh every particle it consumes till old enough to kill; then weigh the calf again and see how much flesh it has gained on every hundred pounds of milk consumed, and give us the result.

FOREIGN AGRICULTURAL NEWS.

By the steam-ship *Caledonia* we are in receipt of our foreign journals up to April 4th.

MARKETS.—*Ashes* had declined and were in limited demand. *Cotton* was more firm and had recovered the fall of $\frac{1}{4}$ d. per lb., which took place early in the month. Stock on hand at Liverpool on the 1st of April, 755,000 bales, against 803,000 same time last year. *Flour* quite stagnant, in consequence of the agitation of the Corn laws in Parliament. *Beef* in fair request. *Pork* very dull. *Lard* and *Cheese* the same. *Rice* little doing. *Tobacco* slow of sale. *Wool* in good request, with a slight fall in the lower qualities.

Money is tight and difficult to be had, except on the first class paper.

Indian Corn in Great Britain.—This article continues to arrive in great quantities in the principal ports of this country, and is already becoming one of great consumption. In Liverpool we have several flour dealers and bakers who put forth Indian corn, Indian flour, and bread made of Indian flour, as the prominent article of sale; and amongst the higher classes of society it is used with English or American flour in making bread. At a meeting of the Horticultural Society, held in London, last week, there were distributed to the members a large quantity of packets of seeds of the early sort of Indian corn, the earliest and most prolific variety, and the most suitable for cultivation in this country, which had been sent over from New York to ascertain whether its growth would not introduce a fresh article of food here.

Potato Murrain.—This disease has now appeared in carrots and onions in England, and it is feared it may ultimately pervade all the root crops.

A Startling Anticipation.—Unless a succession of bad harvests intervene to check prosperity, the year 1850 will behold the extinction of horses as a moving power in England, for the purposes of pecuniary gain, in the public transportation of passengers and goods. Every new street, every village, every farm will have its railway.

Cotton in India.—At a recent meeting of the Royal Asiatic Society, a communication was read from Professor Royle, the botanist of the East India Company, detailing some further results of the experimental trials for the culture of cotton in India. Since the last report of Dr. White, 30,000 acres had been put into cultivation; from one acre alone the produce was 700 pounds, and more was to be expected. All now required to make East India Cotton a most valuable export commodity, he said, is the employment of European agents in the India markets, to select the best qualities.

Number of Horned Cattle in Europe:—

Russia.....	19,000,000
Great Britain.....	10,500,000
Austria.....	9,942,000
France.....	6,684,900
Prussia.....	4,275,700
Italian States.....	3,500,000
Spain.....	2,500,000
Netherlands.....	2,500,000
Sweden.....	2,647,000
Bavaria.....	1,895,000
Denmark.....	1,607,000
All other States.....	5,258,000

Total in Europe.....70,270,974

The number of Horned Cattle in the United States in 1840, were 14,971,586.

Guano at the Cape of Good Hope.—Several farmers and gardeners at the Cape have used considerable

quantities of guano this year, with marked success in all kinds of crops. It is the best and most manageable manure yet discovered.—*Simmond's Mag.*

Deep Drains.—We notice that several writers in the late volume of the English Agricultural Society Journal, contend strongly that drains in a very stiff soil are much more effectual from three to four feet deep from the surface, than when made more shallow. Another advantage is, that they may be placed twice as far apart as the shallow drains. Thus the expense of deep draining is very little more than that of shallow draining.

Benefits of Irrigation.—The same journal above asserts that the water meadows at Audley End yield from 6 to 8 tons of hay per acre, at three to four cuttings during the season. We will add for ourselves that such hay cannot be as sweet and nutritious as that grown on dry meadows. The Italian rye-grass is considered especially suitable for irrigation.

Value of Burnt Clay.—Experiments with burnt clay as a top-dressing to wheat lands, last year, added 25 per cent. to the crop.

Culture of Italian Rye Grass.—I am quite satisfied of its being the most valuable plant I know of, especially for early spring feed; it comes to perfection for feed quite as early as rye, and the comparison between the two for feeding qualities is as 10 to 1 in favor of the Italian rye-grass.—*English Ag. Soc. Journal.*

Analysis of Indian Corn.—Dr. Playfair has recently analyzed specimens of American growth in London, and finds its composition as follows:

Protein.....	7	} 100 parts.
Fatty matter.....	5	
Starch.....	76	
Water.....	12	

One pound of Indian meal will absorb five pints of water in making it into mush or pudding, and when sufficiently boiled the mush will weigh 4 1-2 lbs.

It will be seen from this analysis that it contains less protein, or nutritive matter, than wheat, oats, or barley, but more than either rice or potatoes. It contains, in fact, three and a half times the quantity of nutritive matter that is found in potatoes, and a very much larger quantity of starch, and less water. It also possesses more fatty matter than any of those, which is an important consideration where the mere fattening of animals is considered. It will be thus found, as an article of diet, both for man and beast, superior to potatoes and rice, but inferior to wheat, oats, and barley.—*Gar. Chron.*

A Mode of Illustrating the Injury done to Manure by being repeatedly Flooded with Rain Water.—Suppose that any of the married men in this company was to get hold of his wife's teapot, after she had done with it, and was to dry up the leaves carefully, and bring them to her for her tea the next morning, I would just ask you, whether she would be likely to find out the trick or not? I imagine she would not be long in discovering the cheat; and I might venture to guess he would find out to his cost that, if that was the way he was to keep her in tea, she would soon find a way to keep him in hot water. Now, if the wife would feel so indignant at being supplied with tea that had been wet two or three times, how ought the farmer to feel that was supplied with manure that had been wet two or three hundred times? It is true the farm cannot fight its own battle as well as the mistress; but there is such a thing as passive resistance, and you may depend on it, that in the harvest, the farmer will be made to feel, that in cheating his land, by giving it manure which has lost all its strength, he has been, in fact, cheating himself, and that this may have a worse result even than cheating his wife.—*Speech of Mr. Blacker.*

Editor's Table.

The publishers of the *American Agriculturist*, with this number, send bills to all who are in arrears, and will expect them to remit the small amount promptly. It will be remembered that our terms are in advance; and at the first of the year we requested all who did not wish the paper to return the first number, and those who have not done so are considered as regular subscribers. The publishers are highly gratified at the promptness of subscribers in forwarding their subscriptions, and trust that the few who are still in arrears will find it convenient to remit at once by mail, that we may thus have clean books and renewed facilities of improving our Journal. Should any error arise in sending bills please inform us.

AGRICULTURAL INSTITUTE.—We neglected at the time to call attention to the advertisement of this Institute in our last number. We are personally acquainted with the gentlemen concerned in it, and can recommend them with all confidence to the public. We like their plan of instruction accompanied with manual labor, and think it must be highly successful with their pupils. See Advertisement, page 167.

CORTLAND COUNTY AG. SOCIETY.—Henry S. Randall, President; James S. Leach, Sec. We have received the premium list of this Society, and find it embraces a large number of prizes. The Show takes place at Cortland Village on the 23d and 24th of September next. It will doubtless be a highly spirited affair, and we hope it may be in our power to attend.

MOWING MACHINE.—We are anxious to obtain one of these machines, and shall be obliged if any of our readers know of any which work well, that they will give us full information on the subject.

CHINA TREE, DUTTON, EARLY CANADA, AND SWEET CORN.—Can any one inform us where we can purchase a first-rate quality for seed, at a moderate price, of these varieties of corn? We should like some in the ear and some shelled.

MUNIFICENT DONATIONS.—Messrs. Sam'l Appleton & J. A. Lowell, of Boston, have each given *One Thousand Dollars* to the Massachusetts Horticultural Soc'y. When shall we have a Horticultural Society in this great emporium? and will our wealthy citizens come forward and endow it as liberally as the Bostonians have that of their city?

TO PREVENT THE POTATO ROT.—Take salt, lime, and charcoal or ashes, mix them equally together, and apply about a gill of this mixture to each potato hill at the time of planting, or double the quantity round the stalks after the first time hoeing, and it will almost infallibly protect the crop from the rot.

SHEEP FARMS AND HUSBANDRY IN MISSOURI.—Henry A. Ancrum, Esq., of Ashley, Pike Co., Missouri, informs us that he has a large tract of the finest kind of rolling prairie land, suitable for sheep pastures, and would be glad to make an arrangement with flock masters to occupy it. Ashley is 80 miles from St. Louis. For further particulars please address Mr. Ancrum, who will be happy to give full information upon the subject.

QUARTERLY JOURNAL OF AGRICULTURE AND SCIENCE.—We are glad to hail the appearance of this able and high toned journal again, for we feared it might not be continued another year. It abounds with valuable articles, both agricultural and scientific, and we earnestly commend it to the attention of our readers as worthy of their support. It is conducted by Dr. E. Emmons, State Geologist, and A. Osborn, Esq., Albany, N. Y. The present No. has a beautiful steel-engraved portrait of Governor Wright, and several other embellishments. It contains 160 pages, and is as well got up as the best European journals of the

kind. The price is only \$2 a year. We shall think it a disgrace to the country if this work is not well sustained.

AN ENCYCLOPEDIA OF DOMESTIC ECONOMY: Comprising such subjects as are most immediately connected with housekeeping; as the construction of Domestic Edifices, with the modes of warming, ventilating, and lighting them; a description of the various articles of Furniture; a general account of the Animal and Vegetable substances used as Food, and the methods of preserving and preparing them by cooking; making Bread; materials employed in Dress and the Toilet; business of the Laundry; description of the various Wheel-carriages, preservation of Health, Domestic Medicines, &c., &c. By Thomas Webster. Illustrated with nearly One Thousand Engravings; pp. 1238, octavo. Price \$4. Harper & Brothers, 82 Cliff Street, N. Y. In presenting this superb and highly useful work to the public, the Messrs. Harper have done the country a great service. We consider it indispensable to the housekeeper, as it treats in a condensed and perspicuous manner of everything relating thereto. The ladies would do well to place it in their libraries for daily consultation. The knowledge it contains will not only be found eminently useful to them in their household avocations, but of historical and general scientific interest. There are thousands of facts here we are sure it will greatly enlarge and enlighten their minds to be the possessors of, and the acquisition of which will add no little to their pleasures and usefulness.

AMERICAN NATURAL HISTORY.—By John D. Godman, M. D., to which is added his last work, the *Rambles of a Naturalist*, with a Biographical Sketch of the Author. In two volumes. Third Edition. Philadelphia: Uriah Hunt & Son. Price \$4 00. This is a beautiful edition of one of the most agreeable and useful books in the English language. The illustrations are numerous and exceedingly faithful to nature. We can never cease to regret the premature death of Dr. Godman; but as it was, he ran a brilliant career, and during his short life added much to the records of American Natural History.

MEMOIRS OF THE PRETENDERS AND THEIR ADHERENTS. By John Heneage Jesse. In two volumes. Philadelphia: J. W. Moore. This beautifully printed work forms Nos. 1 and 2 of Moore's Select Library. It combines in its truthful narrative the adventures of the wildest romance, and is particularly calculated to interest the youthful student of history.

JOURNEY TO ARARAT. By Dr. Friedrich Parrot. With Map and Wood cuts. Translated by W. D. Cooley, pp. 389, 12mo. Price 50 cents. Harper & Brothers, 82 Cliff Street, N. Y. It is a great misfortune that a taste for the lighter productions of the European press in this country has generally forbidden the republication of scientific voyages and travels, which are occasionally sent forth by eminently learned men abroad, and foreign governments. Among such is the work of Dr. Parrot's journey to Mount Ararat; which, from its being the resting place of the ark, after the subsiding of the awful flood that deluged the world, and its own intrinsic grandeur and importance, in what may yet become a highly civilized and populous region, must ever be an object of interest to the biblical student, the general historian, and the man of science. Ararat rises 17,230 feet above the level of the sea. Its top is covered with eternal snow, from the height of 12,750 feet, and all around is grand and magnificent in the extreme. May it be our privilege one day to wander, at least, at its base! The Messrs. Harper have issued this work in a style similar to English publications, the print being very clear and distinct, and the paper of a firm velvety softness, that makes it a pleasure to touch.

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, APRIL 22, 1846.

ASHES, Pots,.....per 100 lbs.	\$3 87	to	\$4 00
Pearls,.....do.	4 18	"	4 25
BALE ROPE,.....lb.	5	"	7
BARK, Quercitron,.....ton	25 00	"	26 00
BEANS, White,.....bush.	1 12	"	1 25
BEEWAX, Am. Yellow,.....lb.	23	"	33
BOLT ROPE,.....do.	12	"	13
BONES, ground,.....bush.	40	"	55
BRISTLES, American,.....lb.	25	"	65
BUTTER, Table,.....do.	16	"	25
Shipping,.....do.	9	"	13
CANDLES, Mould, Tallow,.....do.	9	"	11
Sperm,.....do.	25	"	38
Stearine,.....do.	20	"	25
CHEESE,.....do.	5	"	10
COAL, Anthracite,.....2000 lbs.	5 50	"	6 50
CORDAGE, American,.....lb.	11	"	12
COTTON,.....do.	6	"	11
COTTON BAGGING, Amer. hemp,....yard,	13	"	14
Kentucky,.....do.	12	"	13
FEATHERS,.....lb.	26	"	34
FLAX, American,.....do.	7	"	8
FLOUR, Northern and Western,.....bbl.	5 31	"	5 50
Fancy,.....do.	6 00	"	6 50
Southern,.....do.	5 00	"	5 50
Richmond City Mills,.....do.	6 25	"	6 50
Rye,.....do.	3 25	"	3 38
GRAIN—Wheat, Western,.....bush.	1 15	"	1 25
Southern,.....do.	1 10	"	1 20
Rye,.....do.	73	"	74
Corn, Northern,.....do.	67	"	68
Southern,.....do.	67	"	68
Barley,.....do.	62	"	65
Oats, Northern,.....do.	43	"	45
Southern,.....do.	38	"	40
GUANO,.....do.	2 00	"	3 00
HAY, in bales,.....100 lbs	65	"	80
HEMP, Russia, clean,.....do.	205 00	"	210 00
American, water-rotted,.....ton	105 00	"	185 00
American, dew-rotted,.....do.	75 00	"	125 00
HIDES, Dry Southern,.....do.	8	"	10
HOPS,.....lb.	20	"	35
HORNS,.....100.	1 00	"	7 00
LEAD, pig,.....do.	3 75	"	4 00
Sheet and bar,.....lb.	43	"	5
MEAL, Corn,.....bbl.	3 25	"	3 38
Corn,.....hhd.	15 75	"	16 00
MOLASSES, New Orleans,.....gal.	29	"	31
MUSTARD, American,.....lb.	16	"	31
NAVAL STORES—Tar,.....bbl.	1 75	"	2 00
Pitch,.....do.	1 25	"	1 38
Rosin,.....do.	62	"	70
Turpentine,.....do.	3 50	"	4 00
Spirits Turpentine, Southern,....gal.	55	"	59
OIL, Linseed, American,.....do.	64	"	65
Castor,.....do.	60	"	73
Lard,.....do.	67	"	70
OIL CAKE,.....100 lbs.	1 75	"	1 88
PEAS, Field,.....bush.	1 50	"	2 09
PLASTER OF PARIS,.....ton.	2 87	"	3 00
Ground, in bbls.,.....of 300 lbs.	1 12	"	1 25
PROVISIONS—Beef, Mess,.....bbl.	7 00	"	9 00
Prime,.....do.	4 50	"	5 50
Smoked,.....lb.	6	"	9
Rounds, in pickle,....do.	4	"	6
Pork, Mess,.....bbl.	10 50	"	13 00
Prime,.....do.	9 00	"	10 00
Lard,.....lb.	6½	"	7½
Bacon sides, Smoked,....do.	3	"	4
In pickle,.....do.	3	"	4
Hams, Smoked,.....do.	6	"	10
Pickled,.....do.	4	"	7
Shoulders, Smoked,.....do.	5	"	6
Pickled,.....do.	4½	"	5
RICE,.....100 lbs.	3 75	"	4 56
SALT,.....sack.	1 22	"	1 30
Common,.....bush.	20	"	35
SEEDS—Clover,.....lb.	6½	"	9
Timothy,.....7 bush.	11 00	"	16 00
Flax, clean,.....do.	10 00	"	11 00
rough,.....do.	9 00	"	10 00
SODA, Ash, cont'g 80 per cent. soda,....lb.	3	"	3
Sulphate Soda, ground,.....do.	1	"	—
SUGAR, New Orleans,.....do.	5	"	—
SUMAC, American,.....ton.	35 00	"	37 50
TALLOW,.....lb.	7	"	8
TOBACCO,.....do.	3	"	8
WHISKEY, American,.....gal.	22	"	22
WOOLS, Saxony,.....lb.	35	"	54
Merino,.....do.	30	"	30
Half blood,.....do.	25	"	25
Commodo,.....do.	20	"	22

REMARKS.—*Ashes* transactions light. *Cotton* dull at a decline of $\frac{1}{4}$ of a cent per lb, since the arrival of the *Caledonia*. *Flour* little doing. *Grain* the same. Indeed, there seems to be an almost unexampled lethargy in our market just at this moment in all kinds of produce.

Money is scarce, and the banks discounting none but the best paper.

Stocks a good deal depressed.

The Weather has been very fine, though rather too dry thus far this spring. Copious showers, however, have set in lately. We hear good accounts of the crops at the South; and winter rye and wheat are looking uncommonly well at the North.

TO CORRESPONDENTS.—L. T. Talbot, Henry M. Waite, T. N. Hallister, Solon Robinson, M. W. Phillips, Alexander McDonald, Lert, An Old Grazier, are received. The excellent article, Rotation of Crops, by S. Y., will be inserted in our next.

ACKNOWLEDGMENTS.—A pamphlet on the cultivation of the Grape and manufacture of Wine, also character and habits of the Strawberry, by N. Longworth, of Ohio; Report of the Committee on Agriculture of the New York State Assembly, with a valuable Appendix on the use of Salt as a Manure; Oration before the Burk County Ag. Soc., S. C., by M. C. M. Hammond; Address before the Hamilton County Ag. Soc., Ohio, by John Caldwell; Proceedings of the Agriculturist's and Mechanic's Association of Louisiana; and a Letter upon the Application of Marl addressed to the Agricultural Society of Jefferson County, Georgia, by J. H. Hammond.

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A System of Book-keeping, as applied in practice to the business of Jobbing Merchants, City Retail Merchants and Country Merchants, with a concise plan of accounts, for all persons, in one book, suited to Mechanics, Farmers, and Professional men; being a self-instructor, and for the use of schools. By James Arlington Bennett, LL.D., author of the American Practical System of Book-keeping, by double entry, &c.

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Inquiries and applications may be addressed to either of the undersigned at Coldenham, Orange County, N.Y.

LINDLEY MURRAY FERRIS, President,

Samuel Wait, Jr., Secretary.

References—Frederick J. Betts, Esq., President of the Orange County Agricultural Society; John Caldwell, Esq., Salisbury, Orange County; A. B. Allen, Esq., Editor of the American Agriculturist; Wm. Partridge, merchant, New York; Peter H. Schenck, Esq., New York; Hon. Morris Franklin, New York; and the officers of the American Institute.

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May, 2t

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